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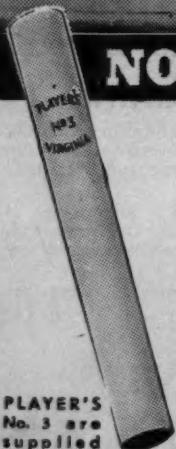
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CONTENTS.

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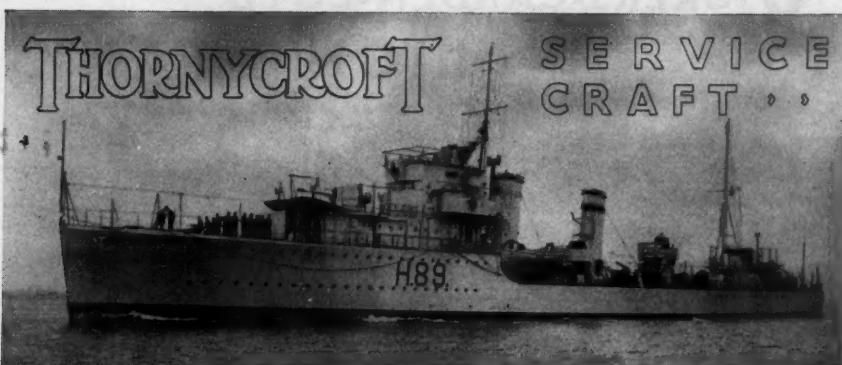
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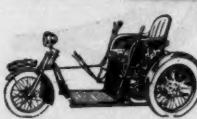
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CONTENTS FOR AUGUST, 1938

	PAGE
Secretary's Notes...	xv
Frontispiece : The Development of the Float Seaplane	—
+ Germany of To-day. (Lecture). By Dr. E. Woermann	471
The Development of the Territorial Army. (Lecture). By W. D. S. Brownrigg, C.B., D.S.O.	485
The Legality of Aerial Bombardment. (Lecture). By Philip A. Landon, M.C., M.A.	500
Spanish Patrol. Some Personal Experiences. By "Walrus"	522
An International Air Force. The Basic Difficulty. By J. M. Spaight, C.B., C.B.E., LL.D.	532
The Infantry Section—French, German and British. By Major G. F. Ellenberger, M.C., p.s.c.	539
The Development of the Float Seaplane. By H. J. C. Harper, A.M.Inst.C.E., A.F.R.Ae.S.	552
The Frontier Policy of the Government of India. (Lecture). By Lieutenant-Colonel Sir Ralph Griffith, K.C.S.I., C.I.E....	562
The Role of Aircraft in the Spanish Civil War. By Capitaine Didier Poulain	581
Fire Support from the Air. By Colonel M. Everett, D.S.O., p.s.c.	587
The Support of Infantry Tanks in the Attack. By Major G. B. J. Kellie, M.C., R.A.	592
Warship Types. A Summary of the Designs Advocated by Gold Medal Competitors ...	599

Continued on page 10.

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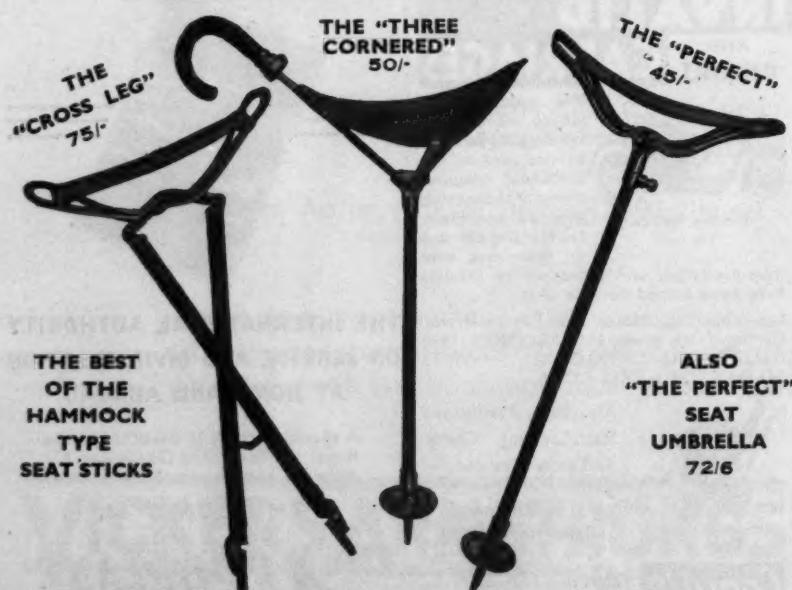
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CONTENTS—continued.

	PAGE
Torpedo Boats or Destroyers ? By Lieutenant W. J. van de Kasteele, R.N. ...	604
General Gamelin, Chief of the French General Staff of National Defence. By Brigadier T. G. G. Heywood, O.B.E. ...	607
Uniforms, Equipments, Standards and Colours of the British and Indian Armies ...	614
The International Situation :—	
Bombing of British Ships ...	617
Battleship Displacements ...	620
The Spanish Civil War ...	621
Germany and the Balkans ...	623
Italy ...	624
The Sino-Japanese War ...	625
Correspondence ...	629
Navy Notes ...	633
Army Notes ...	649
Air Notes ...	660
Reviews of Books ...	670
Additions to the Library ...	681

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Situated in the Banqueting Hall of the old Palace of Whitehall (1622), with its magnificent Rubens ceiling, the R.U.S. Museum is a treasure house of relics and mementoes of great victories and renowned warriors. There is also a most valuable collection of Uniforms, Medals, Ship, Tank, and Aircraft Models, and models of the battles of Trafalgar and Waterloo.

For Members and their friends, there are private entrances to the Museum from the Institution.

H.M. Forces in uniform are admitted free at the public entrance.

Admission to the general public is 1s.; Wednesday and Saturday after Noon, 6d.

SECRETARY'S NOTES

August, 1938.

Representative Member on the Council

Major-General Laurence Carr, D.S.O., O.B.E., has succeeded Lieutenant-General E. K. Squires, D.S.O., M.C., on taking up the appointment of Director of Staff Duties at the War Office.

New Members

The following officers joined the Institution during the period 15th April to 15th July :—

ROYAL NAVY

Paymaster-Midshipman M. B. C. Sumner, R.N.
Captain G. W. Wilson, Royal Marines.
Lieutenant-Commander K. A. Short, R.N.
Lieutenant R. J. Hemingway, R.N.
Lieutenant G. Talbot-Smith, R.N.
Lieutenant V. C. Marryat, Royal Marines.
Naval Cadet G. C. Yorke.
Lieutenant B. S. Soman, R.I.N.

ARMY

Captain C. Le Breton-Simmons, Royal Artillery (R. of O.).
Lieut.-Colonel Neville Collins, The Loyal Regiment.
Lieutenant N. M. Hay, Royal Signals.
Major G. W. Kennedy, M.C., The East Surrey Regiment.
Captain I. C. McI. Stevens, The Royal Fusiliers (R. of O.).
Gentleman Cadet R. C. Money, Royal Military College.
Lieutenant M. St. J. Oswald, Royal Horse Artillery.
Lieutenant J. R. S. Macdonald, The Royal Fusiliers.
Lieutenant G. V. Britten, The Northamptonshire Regiment.
Major E. R. Mahony, Irish Guards.
2nd Lieutenant Harold Smither, Royal Corps of Signals, S.R.
Major E. Montague Jones, O.B.E., T.D., late 1st Herts Regiment and O.T.C.
Captain F. M. Slater, R.A. (T.A.).
Colonel P. S. Tomlinson, D.S.O., late R.A.M.C.
Captain G. Taylor, The West Yorkshire Regiment.
Captain W. H. Jackson, The Royal Warwickshire Regiment.
2nd Lieutenant R. Lee, Royal Tank Corps, S.R.
Lieutenant H. M. Miles, The Loyal Regiment.
Lieutenant R. J. Griffiths, The Manchester Regiment.
Captain A. E. G. Walker, Royal Artillery.
Captain G. A. M. Anstee, M.C., The Bedfordshire and Hertfordshire Regiment.
2nd Lieutenant D. M. St. C. Thom, Royal Tank Corps.
Lieutenant C. E. Welby-Everard, The Lincolnshire Regiment.

Lieutenant J. H. Cubbon, The Cheshire Regiment.
 Lieutenant C. C. G. Milward, The Royal Northumberland Fusiliers.
 Lieutenant J. C. B. Thompson, The Sherwood Foresters (T.A.).
 Major J. L. Pott, R.E. (T.A.).
 Major D. J. Stewart, The York and Lancaster Regiment.
 Captain H. H. Goss, The East Yorkshire Regiment.
 Lieutenant F. A. Bibra, Royal Artillery.
 Lieutenant C. B. MacKenzie, Q.O. Cameron Highlanders.
 Lieutenant R. J. Cunliffe Cave, The Royal Scots Fusiliers.
 Major H. D. Badger, Sedbergh School O.T.C.
 Lieutenant J. D. F. Curling, 10th Gurkha Rifles.
 Lieutenant Sarda Nand Singh, 10th Batta, 7th Rajput Regiment.
 Lieutenant M. L. Cummins, The Royal Ulster Rifles.
 Lieutenant G. M. Palmer, Royal Artillery.
 2nd Lieutenant D. H. Gwilliam, The Queen's Own Royal West Kent Regiment.
 Lieutenant E. M. Palmer, Royal Tank Corps.
 Lieutenant H. M. Fraser, Coldstream Guards.
 Lieutenant R. C. Warlow-Harry, Royal Horse Artillery.
 Lieutenant J. C. H. Eyles, The Wiltshire Regiment.
 2nd Lieutenant J. W. Mann-Thomson, Coldstream Guards.
 Major-General Laurence Carr, D.S.O., O.B.E.
 Captain F. H. Cotton, M.B.E., The Hampshire Regiment.
 Captain A. J. Keddie, Royal Signals.
 Lieutenant I. R. Græme, Royal Artillery.
 Captain R. A. H. Walker, Royal Tank Corps.
 Lieutenant-Colonel W. A. Grey-Wilson, M.C., The Durham Light Infantry.
 Captain P. D. Denman, 3rd/17th Dogra Regiment, I.A.
 Colonel E. G. Hume, I.A. (ret.).
 Lieutenant C. L. Richardson, B.A., R.E.
 Major H. A. Shaw, M.C., late R.G.A.
 Captain R. B. Stockdale, R.A.O.C.
 2nd Lieutenant B. G. Britton, 5th Royal Inniskilling Dragoon Guards.
 Captain J. H. Max-Muller, Queen's Westminster Rifles (S.R.O.)
 2nd Lieutenant D. B. Sedgwick, The Royal Berkshire Regiment.

ROYAL AIR FORCE

Flight Lieutenant R. G. C. Arnold, R.A.F.
 Pilot Officer K. E. Newton, R.A.F.
 Squadron Leader H. J. Pringle, R.A.F.

INDIAN POLICE

Assistant Superintendent Rowland Bowen.

Gold Medal Essay (Air), 1938

The following subject has been selected :—

" Discuss the influence which modern air forces may exert on British strategy in a major European War in which Great Britain is involved; and suggest what higher control organization is desirable in order to co-ordinate the operations of the three Services."

LIBRARY**Up-to-Date Information**

Books relating to International Affairs, Defence Problems, and Service Developments are liable to become out of date, whereas articles published in quarterly and monthly journals and magazines frequently contain valuable reports and reviews of recent changes. With a view to enabling Members to be supplied with the latest information, such articles are bound up in pamphlet form and indexed under their appropriate subjects. If they will state what subject they are particularly interested in, the Librarian can often assist them with the loan of one or more such pamphlets to supplement the latest book dealing with it. The Library has other sources of up-to-date information which may be of assistance to Members, particularly those who are engaged in special studies connected with Promotion Examinations or in preparation for the Staff Colleges.

N.B.—IN VIEW OF THE INCREASING DEMAND FOR BOOKS FROM THE LENDING LIBRARY, IT IS ESSENTIAL IN THEIR OWN INTERESTS THAT MEMBERS SHOULD ADHERE STRICTLY TO THE RULES GOVERNING THE RETURN OF BOOKS. FAILURE TO DO SO IS CAUSING MUCH INCONVENIENCE AND INVOLVING THE INSTITUTION IN UNNECESSARY EXPENSE AND CLERICAL LABOUR.

JOURNAL**Date of Publication**

In future the JOURNAL will be published on the 25th January, April, July and October, but the numbers will still be known respectively as the February, May, August and November issues.

February, 1938, Journals

Owing to exceptional demand for the JOURNAL of February, 1938, the Institution's stock of that number is exhausted. Will any Member who has finished with his copy kindly return it, in order that copies of this issue may be available to new Members joining later in the year. There is also a shortage in the stock of May, 1938, Journals, for which there has been a heavy demand.

Acknowledgment

Acknowledgment should have been made to the Société d'Editions Géographiques, Maritimes et Coloniales, Paris for the extensive use, which the author reported he had made in his article on "The Destruction of Seaborne Commerce," published in the JOURNAL for February, 1938, of their publication *Les Corsaires du Sud et Le Pavillon Etoile*, by Lieutenant de Vaisseau Lepotier, price 16 francs.

MUSEUM**Special Exhibition**

The Special Exhibition depicting the Mechanization and Modernization of the Navy is now on view, and will be retained throughout the Summer holidays. It includes a series of models and photographs illustrating the development of propelling machinery from the introduction of auxiliary steam engines in full-rigged sailing ships to the latest types in use in the Service to-day.

The changes from the days of wooden gun-carriages to geared and power-driven mountings can be seen in a series of scale models and sectional drawings. A comparison between the torpedo and the method of discharging it in 1876 and to-day, an early and a modern type of searchlight, and other developments connected with torpedoes and electricity are shown in the form of scale drawings specially provided by H.M.S. "Vernon," and in models and relics.

The Fleet Air Arm

In connection with the recent change whereby the Fleet Air Arm has become an integral part of the Navy, a special case of scale models now illustrates the development of this branch of the Service since the War.

Royal Naval Air Service

It is desired to make a small collection of particularly interesting and historical relics connected with the Royal Naval Air Service, and officers who may possess such relics are invited to contribute. Samples of the badges worn by the personnel would be particularly acceptable.

Additions

- (8988) Medal given to Major-General Sir A. Wilson by the French Government to commemorate the unveiling of a memorial to the defenders of the Suez Canal.—Presented by Lieut.-Colonel A. R. G. Wilson.
- (8989) White Ensign carried by the Naval Brigade at Coomassi.—Presented by Major M. MacLeod.
- (8990) Tunic, Royal Military College, Sandhurst, 1912.—Presented by Captain W. G. D. Kapton.
- (8991) Sword and ivory horn which belonged to the Emir of Bida, and presented to Major A. J. Arnold in 1897.—Presented by Mrs. A. J. Arnold.
- (8992) Photograph of Field-Marshal Lord Allenby.—Purchased.
- (8993-94) Autograph letters from Admiral Sir R. Stopford and General Sir G. Cockburn accepting the Trusteeship of the R.U.S.I.
- (8995) Typescript letter signed by Rudyard Kipling.—Presented by Major D. Whiteside.
- (8996) Autograph letter of Lord Nelson.—Presented by Lieut.-Colonel T. B. Olive.
- (8997) Four engravings of pictures by Lady Butler.—Presented by Captain Cumberland.
- (8998) Uniform and accessories of the 10th Hussars, 1846; medals of Lieut.-Colonel J. Vandeleur.—Presented by Miss Vandeleur.
- (8999) Badges and truncheon of the Royal Irish Constabulary.—Presented by Sir L. Dunning and G. Ross.
- (9001) Medals of Major-General W. F. Beatson.—Presented by Miss C. R. Heanley.
- (9002) Reproduction of certificate issued by the New Brunswick Loyalists Society to Captain Haws, descendant of one of the Loyalists who fought for England in the American War of Independence.—Presented by Captain G. W. Haws.
- (9003) Collection of badges.—Presented by Major N. H. D. Dickinson.

Attendance

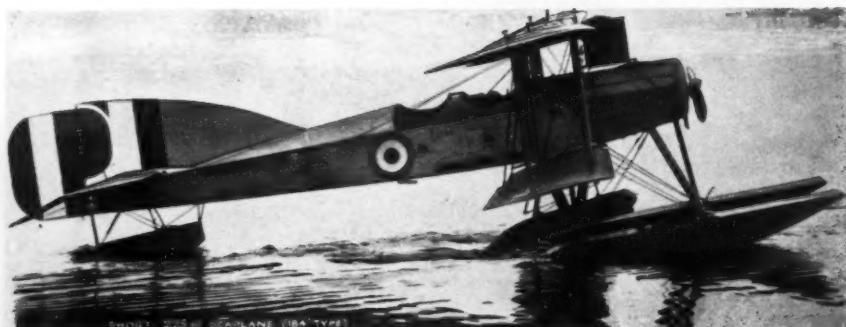
The amounts taken for admission during April, May and June were as follows :—

£193 19s. 6d. in April.

£92 7s. od. in May.

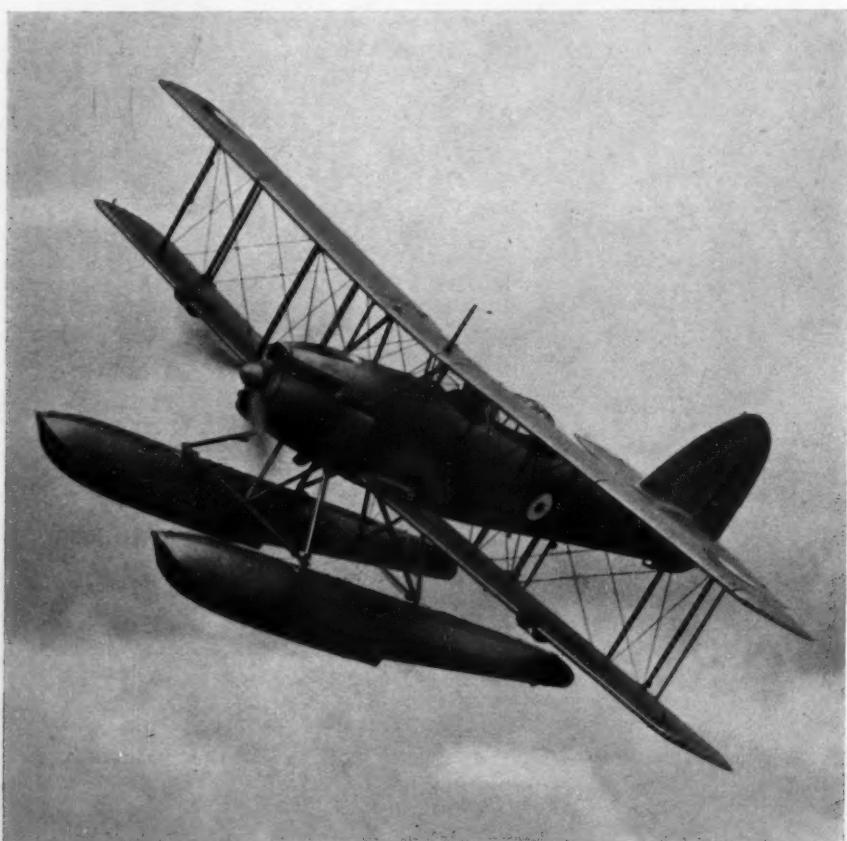
£124 15s. 6d. in June.





Photograph by courtesy of Messrs. Short Bros.

SHORT 184—AN EARLY GREAT WAR TYPE



Photograph by courtesy of "Flight"

FAIREY "SEAFOX"—A PRESENT-DAY TYPE

THE DEVELOPMENT OF THE FLOAT SEAPLANE

(See Article in this Journal)

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[Authors alone are responsible for the contents of their respective Papers.
All communications, except those for perusal by the Editor only,
should be addressed to the Secretary, Royal United Service Institution.]

GERMANY OF TO-DAY

By DR. E. WOERMANN

On Wednesday, 15th December, 1937.

GENERAL SIR FELIX READY, G.B.E., K.C.B., C.S.I., C.M.G., D.S.O.,
in the Chair.

THE CHAIRMAN, in introducing the Lecturer, said : I am very glad to welcome Dr. Woermann, from the German Embassy, who has come to talk to us about Germany of To-day. Dr. Woermann has had a very distinguished career. In 1919 he entered the German Foreign Office, and he has been attached to the Embassy in Paris and to the Legation in Vienna. He served for some years in the Foreign Office in Berlin, and since 1936 has been the Minister Plenipotentiary and Counsellor of the German Embassy in London. Therefore you will realize that he is very well qualified to deal with his subject.

LECTURE

IT is, of course, very difficult to give you in such a short time a true picture of modern Germany ; so I must limit myself, after a few introductory remarks, to a description of some of the principal institutions of National Socialist Germany.

The two conceptions—National and Socialist, will follow us all through, for they dominate the life of the individual, and the life of the State and the nation. That there is such a synthesis between nationalism and socialism may seem surprising, but I hope to be able to give you a true impression of how in practice they work together in my country. Nationalism in Germany is not regarded in the same way as Chauvinism. After the tremendous struggle of the late War, the implications of nationalism have become much deeper with our people : to us it means that we must put the nation first, whatever we do and think ; it embraces our real love of our nation and its cultural achievements ; but it also implies our respect for other nations and their great deeds and achieve-

ments. It means that we must do our utmost to uphold our race, because we believe that whatever we can achieve must be the product of our national qualities, and not of an ill-conceived and ill-defined internationalism.

Socialism—as we see it—has nothing to do either with Bolshevism or Marxism. There is not in our socialistic idea the egalitarian tendency which bars progress. Our Socialist State cannot be created just by abolishing capitalism. On the contrary, we think that the accumulation of new capital amongst a wide number of our fellow-countrymen will enable them to render better service to the nation. But in our idea it is both unjust and absurd that a few should live in comfort whilst others are starving, and we maintain that, whenever private enterprise does not succeed in satisfying the needs of the people in some special sphere, then it is the duty of the State to intervene.

The new Germany is founded on these two guiding principles—nationalism and socialism, and our national institutions are also based on them.

I think the simplest way of explaining some of our most important institutions will be to follow the life of a young German of to-day. Let us call him Fritz—a name which will anyhow not sound unfamiliar to you. Our young friend grows up in his family until the age when he has to go to school. He is the first, but by no means the only child of his family: as you know, the population problem is one of the greatest problems not only of my country but of the whole white race. We in Germany, therefore, endeavour to avoid stagnation or retrogression in our population just because people might think it more comfortable to have only few children or none at all: you all know that that is a very real danger, not only for Germany but for many other European countries. If the situation in that respect should remain stationary as it was in 1933, Germany would experience a sure and rapid decline of her population in the course of the next few decades. Only with an average of four to five children in every family can such a decline be avoided. Therefore families with a larger number of children are favoured with tax facilities, while the bachelor has to bear heavy financial burdens, and I think that is quite right. In effect, little Fritz's welfare was attended to before he was born, because the State provided his father and mother with a marriage credit allowance, which enabled them to furnish their apartment, and that on an economically sound basis. Immediately after the birth of the child another social organization of Germany—the National-Socialist Welfare organization—took care of the child, and especially its sub-organization—"Mother and Child," which sees that poor mothers and their children are looked

after as regards medical treatment and holidays in the country or at the seaside.

A few years after entering school, namely, when he is about ten, our small German becomes for the first time an active member of one of the great organizations of the National Socialist Party. He is enrolled in the *Jungvolk*, that is to say, the Young Boys' Association. This is a sub-organization of the Hitler Youth, which brings young boys from ten to fourteen years of age together for sports and games, mostly in the open air, and teaches them that they are not alone in this world, but that they have to play their part amongst their fellow-children irrespective of the social standing of their parents. At this age we try for the first time to implant the social idea of the community and of the recognition of leadership. From the age of fourteen to eighteen our young Fritz joins the Hitler Youth, which is the only youth organization in Germany. Membership of the Hitler Youth, as of the *Jungvolk*, is not compulsory, but there is a growing tendency for the whole male youth of the country, as far as they are physically fit, to join this organization. The Hitler Youth is to-day an official State organization with the aim of inculcating the whole German youth physically, spiritually and morally with the idea of national socialist service to the nation and the community. Starting with dress, there are many similarities with the Boy Scouts' organization, and I believe that a German Hitler youth and an English boy scout would easily understand each other, though there may be many differences. The guiding principle of the Hitler Youth is that youth should lead youth. The leaders of the Hitler Youth are drawn from those of their own ranks who have already shown qualities of leadership; the same applies to the *Jungvolk*.

The time the young boy spends in the *Jungvolk* and the Hitler Youth coincides, of course, partly with the school years. I cannot give you an exhaustive survey of the school organization in Germany, as the time at my disposal would not be sufficient, and as many things connected therewith are still in a state of development. There is, for instance, a new type of school—the Adolf Hitler school, which takes only a carefully selected number of pupils. The modern foreign language taught in these schools, as in most German high schools, is English. Besides that Latin is taught. If I look back to my own school days I notice a tremendous change in the German school system: in my time there were only one or two hours a week dedicated to gymnastics, and they were spent in gymnasiums, not in the open air, and I must say they were not very popular amongst the boys. Sports play a bigger part nowadays in German schools, and the difficulty of fitting them in

with school work, the activities of the Hitler Youth and sport organizations proper has been solved.

Let us imagine for a moment that our little Fritz has had the advantage of going to a secondary school, which he left when he was eighteen. It will be two and a half years before he can take up a profession or his studies. During this period he has to serve six months at a labour camp and two years in the army. That is, of course, rather a long time, and to compensate for this it has been arranged to reduce the school time in the secondary schools by one year. So at the age of eighteen we see our Fritz entering the Labour Service. This is one of the finest and best organizations of new Germany : it is another means of educating the German youth in the spirit of the national socialist community and of making them respect the ideal of work, especially manual work, irrespective of their social upbringing and their profession. At the same time the Labour Service performs great works of public utility ; for instance, the draining of swamps, the regulation of rivers and streams, and the reclaiming of land from the North Sea. In this way it serves both educational purposes and national economy. Let me mention a few figures. By the construction of dykes and the regulating of rivers, an area of nearly 138,381 acres have been made safe from inundations. Furthermore, by improving the soil of about 345,954 acres it yielded about 20 per cent. more than before. The Labour Service is also made use of in the case of landslides, floods or forest fires, thereby avoiding loss of property, etc.

Life in a labour camp is, of course, strictly regulated ; nevertheless it is both happy and healthy. For many who have been somewhat spoilt in their youth, the first test is to prove that they can make their bed properly. After rising, a short time is devoted to physical exercise, and after breakfast, work in the woods or fields begins. Those of you who have been in Germany will certainly remember having seen those columns of youths who march singing to their places of work, and have watched them at work, sunburned, clothed only in light shorts.

Before taking up the subject of military service let me dwell some little time on the subject of the National Socialist organizations. On leaving the Hitler Youth it is open to the young man to become a member of the N.S. Party. Any of you who may have attended the Party Congress in Nuremberg will have witnessed the solemn and inspiring ceremony accompanying the enrolment of members of the Hitler Youth into the Party. The young man thereby acquires not only new rights, but also new duties. At the same time he has the chance to enter the other organizations affiliated to the Party—the Storm Troopers, the Protection Squadrons, the National-Socialist Motor

Corps and the National-Socialist Flying Corps. There again there are more duties than rights for the young man ; but one of his rights is to wear a smart uniform, which is, I fancy, much more important for the Germans than perhaps for the English.

Now let me say something about military service. As you know, the Treaty of Versailles limited the strength of the German Army to 100,000 men, and that of the Navy to 15,000. Conscription was prohibited and the armament of our defence force minutely prescribed, even in details. Germany was not allowed to have heavy guns and tanks. The Ambassadors' Conference tried even to forbid the use of gas masks, though there is no mention of that in the Versailles Treaty. The maximum tonnage for battleships was 10,000 tons. There was to be no air force, and, though civil aviation was not mentioned in the Treaty, it was severely handicapped in its development because it was argued that it was difficult to draw a line between civil and military aviation.

Nobody could seriously expect that Germany would allow that state of affairs to continue indefinitely. As you know, the armament limitations of the Versailles Treaty had as a counterpart the implication that the other parties to it would also disarm. Germany had, therefore, a right to expect that disarmament. When Adolf Hitler took over the Government in 1933 it was only natural that he considered his first and most important task was to acquire equality of rights for Germany in the military field. He seriously tried to accomplish this equality of rights by several treaty offers ; but these were rejected. Therefore matters had to take their logical course. In October, 1933, Germany left the League of Nations, and in March, 1935, general military service was re-established, and Germany declared herself no more bound to the arms limitation. In March, 1936, German troops entered the demilitarized zone in the Rhineland.

I can indeed say that public opinion in England showed great understanding towards this important step and English policy helped Germany in the crisis following the Rhineland occupation as it did at the time of the Ruhr invasion. I believe that Germany in re-establishing her equality of rights has not only done something quite natural, but has rendered at the same time a great service to peace in Europe. History has taught us that cowards and weaklings are the target of aggression from other peoples, and that they therefore constitute a permanent source of upheaval and crises. Only the brave and the strong can subsist, and only strong nations can maintain the peace of the world.

With regard to the organization of the present German defence force I can be brief, because I speak to an audience of experts, to whom

these questions are quite familiar. If we Germans talk about "The Services," we start with the Army. But as I am in England let me begin with the Navy. It is a matter of history that Hitler offered England a naval pact in 1935 in order to avoid a repetition of all the complications of Anglo-German relations in pre-war times. By the pact which was concluded on the 18th June, 1935, the strength of the German navy is limited to 35 per cent. of the aggregate tonnage of the fleets of England and the other members of the British Commonwealth. This quantitative naval treaty has lately been supplemented by a qualitative agreement which also provides for a full exchange of information in the naval field. I took part in those last negotiations: they were not always easy, but I would like to acknowledge the understanding attitude of the British negotiators. Germany has not yet used her ratio of 35 per cent. to the full; but her navy is being built up on this basis.

The German army, as you will know, is divided into 13 army corps, which consist of 36 infantry divisions, one mountain brigade and armoured units.

As to the air force, you will remember that General Milch and the Chief of the Air Force General Staff lately paid a visit to London, thus returning the visit of the British air force commanders to Germany. I think I can safely say that these visits have contributed to creating a good understanding between the two air forces.

The Supreme Commander of the German military forces is the Chancellor—Adolf Hitler. Next in command is the Minister of War and Chief-Commander of the Military Services, Generalfeldmarschall von Blomberg, who is known to some of you by his visit as Germany's representative on the occasion of the Coronation.¹ The three military services are of equal status. Each of them has its own Commander-in-Chief. For the army this is General Freiherr von Fritsch, for the navy General-Admiral Raeder, and for the air force General Göring, who is at the same time the Air Minister and also responsible for civil aviation.² The German defence forces have always been very closely affiliated with the German people, and the same applies to-day. They represent a happy combination of the cultivation of tradition and the fulfilment of the ideals of the present generation.

We have almost lost sight of our friend Fritz, who had just left the

¹ Generalfeldmarschall von Blomberg has been succeeded by General Keitel since this lecture was delivered, but as chief of the three Services (Oberkommandierender der Wehrmacht) and not as Minister of War.

² General Freiherr von Fritsch has been succeeded by General Walther von Brauchitsch, and General Göring has been promoted to Generalfeldmarschall.

Labour Service, and who, since October, which is the season of enrolment of recruits, has been a soldier. Let us suppose that he joined up with an infantry regiment : if he volunteers before he is due for service he has the right to choose the type of regiment. If he has made sufficient progress he will be appointed corporal after one year's service, and he then takes part in the instruction of the new class of soldiers. Let us hope that after his military service and after having successfully taken further military courses he will be appointed later on an officer on the reserve list. Let me add here that Germany is still much behind by comparison with her neighbours in the West and in the East in one very important respect—she is still lacking trained reserves. Those who have followed the negotiations of the Disarmament Conference will remember that at that time several Powers argued that, in limitation of armaments, trained reserves should not be included : it is rather a laughing matter for us to-day that at that time such arguments were brought forward quite seriously.

In the meantime Fritz has come of age, and it is only now that he can start with his particular studies, should he choose a University career. The life of a German student has become very different from what it was in pre-War times. It is no longer his ambition to drink as much beer as possible ; he must work much harder than he did before, as he cannot start his professional education until rather later. Part of the old romantic student life has disappeared, but only a few regret that. The student is at the same time a member of the Storm Troops, the Protection Squads or the National-Socialist Motor or Flying Corps, and he has thereby duties to fulfil towards the Party. But before all else he has to study. Scientific research work is not restricted in Germany : the idea that it is sufficient in itself is not accepted ; like all other activities, it must be made to serve the community. Sports, too, play rather a different part in university life from what they did before the War.

When Fritz has finished his studies and has acquired a professional position he will think of marriage as soon as possible. The young German is expected to marry between the ages of twenty-five and thirty. I mentioned before the great importance that we attach to a far-seeing population policy ; therefore our Fritz is expected to have at least four-and-a-half children, as such a birth rate is calculated to be necessary in order to maintain the figure of the population. Let me give you another figure : the number of marriages rose from 933,000 in 1932 to 1,280,000 in 1936.

I must now touch upon a problem which otherwise you will think I have avoided : I mean the Jewish problem. This question is too

serious and too difficult to be dealt with in a brief lecture, so I will only deal with that part of it which concerns marriages. A German of Aryan descent can only marry an Aryan girl, and a Jew only either a 100 per cent. Jewess or a half-Jewess. One must have lived in Germany in order to understand what this problem means to us. To keep the race pure seems to us a law of nature, and it has been made one of the supreme laws of National-Socialist Germany. The German man and the German woman about to marry must get a health certificate : that is a means of keeping the race pure and of ensuring a healthy new generation.

But now let us leave our friend Fritz definitely on his honeymoon. The life of his younger brother or of other young Germans might follow a different course. They may have entered professional life at the age of fourteen as an apprentice, in a factory or in an office. The German worker and the German employers are looked after by another great organization of National-Socialist Germany, namely, the German Labour Front, which took the place of the old trade unions, but which comprises at the same time the employers' associations. The position of this organization is quite unique because it is a union of all productive employers and employees. The German Labour Front is intended by the Socialist Community to secure national working peace and national labour. Strikes, lock-outs and other social disturbances have been unknown in Germany since 1933 : strikes and lock-outs are prohibited. Care is taken that the just claims and interests of workers and employers are reconciled by other means. The Labour Front clearly understands that its functions are not limited to cashing subscription money and issuing a journal ; it recognizes the fact that capacity for work must be maintained and furthered. Therefore the Labour Front has created special organizations, of which I would like to mention two, namely, the Board for Beauty of Work (*Schönheit der Arbeit*) and the organization known as Strength through Joy (*Kraft durch Freude*). The Board of Beauty of Work endeavours to increase the joy of work by beautifying workshops, establishing good canteens, putting at the disposal of the workers lawns and sports grounds near the factories. The Board of Strength through Joy endeavours to look after the workers in their spare time in organizing travels and by furthering sports on a really popular basis. By enabling the worker to travel in Germany it makes him proud of his country. Visits to foreign countries contribute towards his respect for other nations and their accomplishments. In 1934 the Board enabled 2,000,000, and in 1936, 6,000,000 workers to travel during their holidays. I have just seen in South Italy two ships with German workers on board, and I realized what it means to a young man to see the world in such an easy way.

There are, of course, numerous State insurance organizations for the benefit of the worker which have been in existence for a long time. But there is the new organization, the National-Socialist Welfare Society (*Nationalsozialistische Volkswirtschaft*), which I have already mentioned. This society is one of the best and most important institutions of new Germany. Membership of this organization as of all the others of the Party is voluntary. What strikes you most are the results achieved by the winter relief work of this body. The funds which it controls are accumulated partly by public collections: perhaps you have seen pictures of the so-called Day of National Solidarity which is held each year in December; Germans of all classes, and prominently amongst them the Ministers, collect during this day for the Winter Relief Fund. In the winter of 1936 more than 1,200,000 honorary helpers assisted 13,000,000 people and protected them from hunger and cold. In the winter of that year 398,000,000 Reichsmarks were collected by the Winter Relief Fund. This will illustrate the fact that National Socialism, as Adolf Hitler once said, is not a theoretical slogan, but a reality.

I have often heard it said, that may be all very well, but the financial and economic prospect in Germany is rather sad. There are even foreigners who hope that a breakdown of National-Socialist Germany will be caused on that account; but they will find that they are mistaken. It is quite true that at the outset National-Socialist finance had to make, so to speak, a leap into the dark. That means that taxes due in future years have been mobilized to a certain extent for immediate purposes. If you call that an experiment, one must say that it has proved successful. The suppositions under which Germany embarked on this venture have been fulfilled. The yield of the taxes has increased to an extent that had been foreseen in order to reach the necessary balance. But how is it possible that the taxes have yielded so much more? That is due, to an overwhelming extent, to the fact that unemployment has practically disappeared. Out of six to seven millions unemployed in 1933 hardly more than half a million were left in November, 1937. This can be called a decisive achievement. In the same time the income of the nation increased from 45,000,000,000 Marks in 1932 to 62,000,000,000 Marks in 1936, and the income of the State by nearly 5,000,000,000 Marks. Savings—a very important barometer of prosperity—went up from 10,000,000,000 to 14,500,000,000 Marks in 1937.

Now it is said that armaments have caused a boom in Germany as well as in certain other countries, and that experience has taught us that another slump is bound to follow after a certain time. Only when that

situation arises, it is further argued, will the faults of the German economic system become evident. It is always a dangerous thing to prophesy, but that is true to the same degree of the good as of the bad prophets. I can only say that we in Germany have the firm belief that this apparently valid law of boom and slump is no longer applicable to our country. How is that possible? The secret is that we do not live in a democratic state based on the idea of *laisser-faire* but in a totalitarian state, where plans to meet such a slump may be made beforehand. How is it that unemployment could be done away with? Partly, it is true, by the German rearmament; but, at the same time, great public works have been undertaken, such as the Reichs motor roads, the building of bridges, *Talsperren*, public works for the State Railway and the Reichs Post, and other extensive buildings. Especially in the building trade there is a very great reserve of work for a state-guided economical administration. The great works of the future have deliberately not been taken up to the full. Certainly, in 1936 for instance, 294,000 apartments were supplied. Also *Siedlung*—one of the most important economic tasks—is in progress. The reserve of works which lies therein can hardly be over-estimated. It is well known that the building industry creates prosperity for almost all the other branches of economic life.

This, however, is not a question of the day, as we are now concerned with the execution of the Four Years Plan, which provides us for the coming years with so many tasks that we are threatened with a lack of workers rather than a lack of work. For the first time you can now see at the doors of the German factories announcements—just as before the War—"Hands are Wanted." Now what is the intention of this Four Years Plan? This plan is naturally also concerned with defence purposes, but this is not the ultimate and particular end. Its true purpose is to give permanent work to the German worker. After our experiences during the World War, it is only natural that much importance is attached to the idea of becoming independent of foreign supplies in the event of a future war, and that this idea should be developed already in peace time.

What was the situation before the War? Our economic policy aimed at exporting as many manufactured goods as possible in order to receive the necessary means of maintaining our people, not only as far as food-stuffs are concerned—for they had to be imported to a great extent from foreign countries—but also in respect of raw materials out of which exported goods had to be manufactured. It is quite a natural idea for Germany to aim at producing herself as much as she can to feed and clothe her people. This policy will, of course, lead to changes, in such

materials as wool and rubber for example. But we have witnessed similar changes in the economic structure many times during the last century. May I remind you that the first sheep was imported into Australia in the year 1803; to-day there are 113,000,000 sheep in the Commonwealth. From 1803 up to 1860 the German demands for wool could be supplied from our own resources. Subsequently the competition of Australian and other overseas wool nearly annihilated German wool production. This is only one instance amongst many. To-day we are endeavouring to increase the production of German wool or to find adequate substitutes from German raw materials. The same thing applies to rubber. Now the question arises whether English wool will be excluded permanently from the German market. I sincerely believe that this will not be the case. I rather think that by the completion of the Four Years Plan the general standard of living in Germany will rise, and that a greater exchange of goods with foreign countries will result from this increased standard of living.

Owing to the shortness of time at my disposal I have not dealt very fully with one main point of the National-Socialist economic programme, namely, agriculture. It is one of the most important aims of the new German policy to re-establish a healthy peasant population by guaranteeing to the farmers prices for their products which will enable them to lead a decent and comfortable life. It is not only a question of increasing the production of German agricultural goods in the framework of the Four Years Plan; the problem lies much deeper. We think that it is very important to have a healthy peasant population for the well-being of the country. The peasant has always been the source of strength of the German nation, and it is our aim to make him again the backbone of our country.

There are some other important aspects of National-Socialist Germany which I can only mention in passing. The first is that, as you all know, we no longer have political parties; there is only one party in Germany—the National-Socialist Party. Membership of that party has been closed for new-comers since 1933, but application for membership is now to a certain extent possible again. There is the problem of the relationship between the State and the Party. On this point the Führer laid down the principle that it is the Party who commands the State. As you know, Germany is not a dictatorship, because we have democratic control by the means of frequent plebiscites. Certainly Germany is not a democracy in the old sense. Germany is a State directed by the Leader, who enjoys the full confidence of the entire nation.

There is another important point which I should mention. We have only recently been able to overcome the ridiculous State particularism

and to create a united Germany. The importance of this great achievement can hardly be over-estimated.

Now that I have reached the end of my lecture, I feel that I should have stressed one more point. When I introduced to you our young German friend Fritz, and when I tried to explain to you some of the National-Socialist institutions which influence his life, the German woman did not receive her full share. In some foreign countries fantastic ideas are held about the role the German woman plays in our national life : this seems strange to me, as in this technical age people live so close to one another that it should not be difficult to obtain correct information. I have often heard it said in foreign countries with regard to the German woman that National Socialism looks upon her only as a "breeding machine." Nothing could be more ridiculous or more stupid. There are millions of German women working in all kinds of professions ; but it is the aim of National Socialism to let a man's work be done by a man and not by a woman. We think that a woman's life has its centre in family life and in the bringing up of the young generation. This is not a National-Socialist invention, but simply a return to nature and her eternal law. National Socialism has no mean and petty *bourgeois* conception of womanhood ; we have not banned bobbed hair nor pretty clothes and everything that goes with them. I know that at the beginning of the revolution there were certain tendencies in that line, but I am glad to say that they have been quickly overcome.

You may think it curious that in addressing you I, a member of the German Embassy, have not touched on foreign policy. But I hope that you will understand that in the position I occupy it is not possible for me to make here elaborate political statements about our foreign policy.

Now what is the best method of informing oneself about Germany ? I think travelling and again travelling is by far the best method. Come to Germany and see for yourself that in our country there dwells a happy and contented people. You will find there how a new generation growing up—a new generation which sees its ideal not in a narrow-minded *bourgeois* type, but in a man who is a real man and in a woman who is a real woman.

DISCUSSION

MAJOR N. MACROBERT : I should like to ask the Lecturer about air raid precautions in Germany. Can he tell us the broad basis or theory on which air raid precautions are taught to the general public ?

THE LECTURER : We attach very great importance to air raid protection in Germany. Until Herr Hitler assumed control, the organization was a private and

not a State one, but now the whole matter is in the hands of the Air Ministry. There is a law in Germany which provides that in case of necessity, in war time, everybody must take part in air raid protection measures, and even in peace time we carry out exercises in that connection. No doubt you read in the papers about the exercises recently carried out in Berlin.

LIEUTENANT-COLONEL D. R. D. FISHER, R.A. : I believe that the birth rate necessary for a stable population is a little over two-and-a-half children per couple. I should like to know how the figure of four-and-a-half children per couple is arrived at in a country like Germany where I believe there are comparatively few bachelors and spinsters.

THE LECTURER : It is impossible to give a general figure for all countries. It depends upon the death rate in the country, and at the moment the late War has some effect on the matter. So far as I know, the figure of four-and-a-half children per family is the official one ; in any case three children are not sufficient. I cannot give you the details as to how it is arrived at, but it is estimated that, if each family has not four-and-a-half children and the death rate remains the same as it is to-day, we shall have a decrease of population in 1950 or thereabouts, and that decrease will progress rapidly. Some time ago I saw in an English paper figures relating to this matter, and I believe that the same problem exists in England.

ADMIRAL SIR RUDOLPH M. BURMESTER : I believe that in the past it has been considered necessary in Germany to place people whose views are opposed to those of the existing Government in institutions called concentration camps. Perhaps the Lecturer would be kind enough to tell us whether there is a reasonable decline in the number of these institutions and their inmates to-day.

THE LECTURER : When there has been a revolution in a country I think the Government has to protect itself against its enemies. In Germany some method had to be adopted for dealing with such people, and concentration camps were therefore instituted ; but, as a matter of fact, they were not invented by that country.

There are far fewer people in the German concentration camps to-day than there were formerly. There are two types of people in these camps : one is the unsocial type, e.g., people who have been convicted several times of crimes, and I think it is very wise not to allow freedom to such people ; the other type is the political prisoners, and I can assure you that their treatment now is a reasonable one. In addition, there are some people who do not deal in a right manner with their employees ; if their conduct is very bad they are sent to concentration camps for a time to learn how to treat their employees properly.

LIEUTENANT-COLONEL M. B. SAVAGE : I should like to ask the Lecturer whether there is freedom of the Press in Germany, how the newspapers are actually run, and who decides what may and what may not be published in the newspapers.

THE LECTURER : We have not a free Press in Germany, and I do not think it is such a bad thing not to have a free Press sometimes. The German idea is that we do not want in our newspapers only those things which have news value ; we want other values as well, and the main point is not to disturb the life of the people and not to disturb international relations. If you read the German papers you will find that they are very careful in the words they use about foreign countries. The Press is a private one, and papers are not censored before they are printed, but the editors are given some idea of what the Government wishes or does not wish to be published.

COLONEL NORMAN KING : I understand that from the age of eighteen to twenty-

one the young men in Germany are taken in labour camps and into the army. During that period have they any opportunity at all of carrying on their studies ? I presume that when they come out of the army at the age of twenty-one they have to do a certain amount of reserve service or take refresher courses, and in any event they cannot start their professional training until twenty-one, having had an interregnum of three years during which they may have lost the habit of learning. Therefore, if their training takes as long as it does in England, they cannot qualify in medicine or law until they are twenty-six.

I should like to ask at what age bachelors are taxed, because there seems very little chance of these young men being able to marry until they are nearly thirty. What effect is that having on the minds of the young men ? Are they accepting the position contentedly or otherwise ?

THE LECTURER : That is a very important problem. I think I mentioned in my Lecture that young men in Germany enter very late upon their professional career. With regard to the artisan class, a craftsman who learns a trade which requires a certain dexterity of the hand, for instance, will lose that to a certain extent during his two and a half years service ; but it is not easy to find a way of overcoming that difficulty. A boy of the professional classes leaves the secondary school at the age of seventeen or eighteen, and then he has two-and-a-half years service. He can begin his professional studies, if all goes well, at the age of twenty-one ; they occupy three years, so that he can start his professional career at the age of twenty-four or twenty-five, which is very late. But when a young German marries he does not ask great things from life or expect a large income ; he is content to lead a very simple life.

CAPTAIN E. ALTHAM, R.N. : At the end of his lecture Dr. Woermann told us that the best way for us to know more of the Germany of to-day was to go there and see the country. I dare say a good many of us have already taken his advice ; I am one of them, and I came away, after a brief but fairly extensive tour over a good deal of Germany, with certain definite impressions, the chief of which were the cheerful industry of the people and their friendliness towards ourselves.

When asking the way or making inquiries—as foreigners often have to do in a strange land—one is inclined to apply to anybody in uniform. In Germany the people one sees most frequently in uniform are men belonging to the fighting services, especially the new Air Force. Another impression that I brought away with me was the extraordinary courtesy of the German fighting services.

THE CHAIRMAN :

In introducing the Lecturer I told you that you would have a very interesting afternoon, and I do not think you have been disappointed. I should like to congratulate the Lecturer very much, not only on the substance of his lecture but on the way in which he delivered it. I am sure that not many of us would care to go to Berlin and give a lecture to an institution like this on " Britain of To-day."

In this country we have always had a very great admiration for the power of organization of the German people and for the great thoroughness with which they deal with their social problems, and after what we have heard this afternoon I think you will agree with me that our admiration has been justified.

The customary votes of thanks to the Lecturer and to the Chairman were carried by acclamation.

THE DEVELOPMENT OF THE TERRITORIAL ARMY

By LIEUTENANT-GENERAL W. D. S. BROWNRIGG, C.B., D.S.O.

On Wednesday, 9th February, 1938.

GENERAL SIR W. M. ST. G. KIRKE, K.C.B., C.M.G., D.S.O.,
Director-General of the Territorial Army, in the Chair.

THE CHAIRMAN introduced the Lecturer.

LECTURE

I HAVE had the great honour to command the strongest Division in the Territorial Army for two and a half years, and it is to that fact that I attribute the further honour of being asked to address an audience in the Royal United Service Institution on the subject of the development of the Territorial Army. I wish, at the outset, to say that the strength of the Highland Division was in no way due to me. It was the strongest when I assumed command. I can only gratefully record the fact that the advent of its first English Commander appointed in peace did not start a landslide in Territorial recruiting in the Highlands! I feel that those people who have come to hear me to-day have only come because they already know a great deal about the Territorial Army, and I know, therefore, that my task is not an easy one. Most of my audience know, probably, a great deal more about the history of the Territorial Army than I do. I can only feel complete self-assurance before an audience of this kind, in my knowledge of the Highland Division and its ways. I must, therefore, ask you to bear with me, when I illustrate my contentions and explanations by constant reference to that Division which I know so well, to that Division whose personnel have been largely responsible for the two happiest and most interesting years of my life.

I propose to divide my lecture into four parts :—

- (a) The forerunners of the Territorial Army.
- (b) Birth of the Territorial Force, its founder and its career to 1914.
- (c) The War, 1914-1918.
- (d) After the War.

THE FORERUNNERS OF THE TERRITORIAL ARMY

Feudalism, introduced under the Norman Dynasty, is the only form of compulsory military service to which the Englishman, Scot, or Welshman has ever responded readily and happily. I have not mentioned the Irishman, as I am dealing with the development of the Territorial Army and that system was never applied to Ireland. It may well be argued that feudalism was not a form of compulsion at all, but rather a contract between the strong and the weak to their mutual advantage; a man gave service instead of money as rent for his land. As I see it, the Territorial Army of to-day is the direct descendant of the feudal system, and, particularly in the Highlands, it retains many of the old feudal characteristics. It is essentially local in its composition, and sometimes might have come out of the past, almost untouched by time. Take, for instance, the Lovat Scouts, up to strength and four hundred strong, with about three hundred garrons (locally-bred hill ponies). This regiment of Scouts, composed largely of Highlanders of the stalker class, is scattered over thirty-one drill stations throughout the Highlands, with one squadron scattered over four islands of the Hebrides. When this unit concentrates for its annual camp the men bring their own ponies from their crofts and islands. Take again the Scottish Horse raised by the present Duke of Atholl for the South African War, mainly from employees on the Blair estates, and commanded by him in that war and also in the Great War. To cite one more example, there is one battery in an artillery brigade in the Highland Division where a battery commander brings with him to camp over half of his battery from the works on the Clyde, where he himself is part-owner. I should like you, therefore, to think of the Territorial Army as the embodiment of the principle of voluntary military service, rather than as a converted form of the Volunteer Force (in whose likeness it was created in 1907), and as a relic of the system whereby the local leader, be he landowner or factory proprietor, can still by his leadership, point the way of military duty to those dependent upon him in their civil avocations.

We must now take a quick look behind us into history in an effort to trace very briefly the evolution of the present-day Territorial Army from the trained-bands of Saxon times. But before doing so I wish to remind you that the foundation of our greatness was laid, not on specially trained bands or hired mercenaries but upon the admission by peer and peasant that the State had a claim upon the manhood of her sons. In the well-known year of 1066, the Saxon bands went down before the Norman conqueror, and we enter upon the days of the feudal system—a system too well-known to require elaboration by me in this short lecture. In 1181, we come to our first important milestone, the Statutes of Assize

at Arms, which welded into cohesion the smaller armies of manorial lords. From thence the armed forces became forces of the Crown, and ceased to be the retainers of Duke or Baron. Our next milestone is the Wars of the Roses, which decimated the baronage of England. Great estates were broken up or confiscated. The civil power benefited as the feudal power declined, and the general people learnt to look to the King's Courts for justice and protection. The removal of so many rival nobles made for a more settled land. The peace that came with it encouraged the arts and crafts, as history teaches us is always the result of periods of peace. Towns began to take the place of hamlets ; the drift from plough to loom is no new thing. But the one-time ploughboy took with him to the town the martial spirit. The train-bands of the cities were evolved and became the lineal descendants of the feudal levies. As an example, from one of these bands arose, in the reign of Edward III, London's Company of Archers, which under Henry VIII were incorporated by Royal Charter as the Guild of St. George, and has now evolved into the Honourable Artillery Company.

To pass on from the Middle Ages, let us stop at our next milestone, the quarrel between King and Parliament, and our one and only attempt to stomach a dictator. It was the knowledge of the strength of the City Companies that emboldened the parliament of Charles I to resist the encroachments of that Monarch's Royal Prerogative. In a few words of generalization, the King relied upon the impoverished country squires and their feudal remnants, whilst Parliament could rely on the strength of towns both martial and financial. Parliament had the means of creating an army from its train-bands. When the monarchy was restored, the peers and cavaliers returned to their estates and had time to brood upon the past and to try to discover the clue to Cromwell's success. The clue lay in finance. How much more effective was a tax upon common wealth for the upkeep of a cohesive armed force than the cumbrous system of armed levies descended from feudal times ? Thus, in 1660, military tenures were abolished, and a standing army became a necessity. As years went by the regular soldier was looked upon rather as we now regard our police. He was the paid guardian of the peace, thus giving time to the ordinary citizen to turn his attention to his private affairs and the pursuit of wealth. So languished the incentive towards voluntary military service as a duty to the State. Our next stopping place in history is 1794, when the dread of Napoleon exposed our military weakness and led to the revival of voluntary service, but this time as an adjunct to the paid forces of the Crown. The Martello towers stand as a reminder of that time and also as a rebuke that in 1804, when the population of England was barely twenty millions (as opposed to double that number to-day), there were 340,000 Volunteers.

But that Fate which watches over the destiny of the British Empire willed that the Napoleonic menace should pass. The voluntary force which had had a hand in its passing was disbanded and the citizen returned to his private affairs and the pursuit of wealth. Waterloo gave security for over forty years. The Indian Mutiny, the war in China, and even the Crimea were too far away from our own shores to make them the active concern of the ordinary citizen. They were the affair of the Royal Navy, and the Regular Army. That was what they were paid for ! But France was close at hand. And France was becoming a little uppish again, under the Emperor Louis Napoleon. In fact, the French Press became rather offensive, and the French Emperor, rightly or wrongly, was credited with sinister designs. So 1859 becomes our next date for a pause in history. There is a good tale which illustrates rather aptly the feelings of that year. A certain Viceroy of India, and a personal friend of the Emperor Napoleon, was on his way out to India to take up the duties of his appointment. He stopped in Paris on the way and dined with the Emperor. The Emperor in a way not unknown to dictators at the present day, was boasting of the achievements of his career. The Viceroy quietly said, " But, Your Majesty has omitted the greatest achievement of all." " What was that ? " asked the Emperor. " Your Majesty has made the British a *military nation* ! " And he had. He had frightened the British public out of their complacency. And I am glad to say that history has repeated itself. We have had another jolt, and are responding in the age-long manner, but not with quite the alacrity I should like to see. We are re-arming it is true, and the Navy and Royal Air Force lack for no recruits. But are the descendants of the feudal levies acting quite as quickly as they should ?

To return to 1859, the War Office disinterred the unrepealed Statute of 1804 whereby it remained lawful for the Crown to accept the services of all companies of Volunteers formed after the passing thereof, and a certain General Peel on 12th May, 1859, issued his famous circular. It authorized the formation of Volunteer Rifle Corps, and Artillery in maritime towns. Its officers were to be commissioned by Lieutenants of Counties. The force was available to be called out to repel invasion, but the Volunteers themselves were to provide their own arms, equipment and uniform. As a parsimonious document it makes our present financial provisions for the Territorial Army seem the madness of extravagance !

Yet such was the spirit of the times, that despite this governmental parsimony, an armed force sprang up like magic. By May, 1861, 170,000 Volunteers had been enrolled. It is unprofitable, in a short lecture, to follow the Volunteers through all the vicissitudes of their progress from 1859 to 1907. Many were the changes and improvements

in pay and allowances to which Volunteers were entitled when called out for military service or training, and they were further compensated by being exempted from the militia ballot. Gradually, too, training was co-ordinated and was carried out in some sort of military formation under regular commanders. But up to the time of the South African War of 1899-1902, the Volunteers and Yeomanry were still only a collection of independent units, unorganized into any higher formation, and unprovided with any ancillary services. It is fair to say that the Volunteer Force as revived in 1859 was the product of panic, but as reorganized from 1863 to 1907 served as a safeguard not only against invasion, but, more important, against the fear of invasion. During this period the tendency was to raise its standard towards that of Regular troops. And it was definitely exempted from the duty of having to act in the aid of the civil power.

Although only liable for home defence, approximately 20,000 volunteers served in the South African War. Before passing to the birth of the Territorial Army let us see how the defence forces were organized on the eve of that great birthday. In 1906, the military forces of the Crown were organized into Regular and Auxiliary troops. The Regular Army, the first line, consisted of one Army Corps of three Divisions at Aldershot, six other Divisions, and four Cavalry Brigades. In all of these there were serious deficiencies to be met on mobilization. The second line was formed of the Militia, about which there is no time to speak here, except to say it was a force originally raised by ballot, but, since 1852, had become a voluntary force with the ballot in reserve. Its number was fixed at 80,000. In the third line were the Volunteers and Yeomanry, often competitors with the Militia for their recruits. There was no system of instruction for the officers. There were no higher formations. There was no internal organization for war.

LORD HALDANE; THE BIRTH OF THE TERRITORIAL ARMY: AND ITS CAREER UNTIL AUGUST, 1914

The organization of the army before the South African War was, to say the least of it, confused. After that War, various committees had sat and reported, with the result that various reforms had been effected before Mr. Haldane became Secretary of State for War at the beginning of 1906 when the Liberal Government under Mr. Campbell-Bannerman returned to power. One such reform had been the inauguration of an Army Council in place of the Commander-in-Chief. When the new Secretary of State had his first interview with the Generals of this Army Council, the senior of them asked him for a general idea of the reforms he had in mind. But the new Secretary of State was not going to be

rushed and gave the following reply : " I am like a young and blushing virgin just united to a bronzed warrior. The public must expect no result from the union for at least nine months ! " At that time he knew but little of military affairs and was wholly ignorant of army organization. But his new task fascinated him ; and his first step was to seek out, and surround himself with the best brains that the Army could then produce. His legal and logical mind first sought the peril against which the nation had to be prepared, before attempting to fashion the instrument of protection. The peril, as he saw it in 1906, was no longer that of an invasion by the French, which had been the peril against which the existing organization may fairly be said to have been designed. Diplomatic changes had made that peril obsolete. But there was a chance that Germany and her allies might invade and occupy France. In that case our security against invasion was threatened, with the Channel Ports in unfriendly hands. The object on which to concentrate therefore was to secure, to a friendly France, the continued occupation of the Channel Ports. To accomplish this we must have an expeditionary force sufficient in size, and in rapidity of mobilization, to go to the help of the French Army in case of an attack on the northern or north-eastern parts of France. Had we that force ? Clearly we had not. So the first step was to design and organize one without completely upsetting such military organization as then existed, and without altering the balance of the Cardwell system. So was conceived the Expeditionary Force of one Cavalry Division and six Infantry Divisions which in 1914 and 1915 achieved what its maker had designed it for. However, with an Expeditionary Force at home (but liable to leave the country) a second line for *expansion* and *home defence* was a necessity. Such was the genesis of the Territorial Army. It had to be created out of the existing organization, so the Volunteers became the foundation of the new structure. In 1907, the Territorial and Reserve Forces Act was introduced into the House. It proved that efficiency and economy were not incompatible, as the Army Estimates were brought down from over 30 millions to within 28 millions (including the whole cost of the new organization). The Bill passed untouched in any material point. In its final form it now graces Appendix One of the Territorial Army Regulations. The Secretary of State himself was indefatigable in travelling all over the country, meeting Territorial Force officers, addressing meetings and stimulating recruiting. And the child grew under its initiator's guiding care.

A few words must suffice as to the details of the reorganization itself. As already pointed out the armed forces, before the Haldane reforms, were organized into the Regular Army as first line, the Militia as second line, and the Yeomanry and Volunteers as third line. But the relation

between these three lines to one another was unregulated by policy or design. The functions of each was undefined and no co-ordination either in peace or war had been contemplated. No system of expansion had been considered. The new organization was an instrument designed for war. Its efficacy depended in the first instance on speed in mobilization (in case of the Expeditionary Force, which had to anticipate any hostile army at the Channel Ports) ; in speed of expansion and support of the Regular Army (in case of the other lines).

The first line was to consist of four Cavalry Brigades and six Divisions, and Army troops, in short, a small professional Army, highly skilled and fully trained, prepared to mobilize in about fifteen days and capable of use overseas. This line was to be supplemented by the Special Reserve, drawn from semi-civilian sources. This Reserve was to be the draft-producer for the first line.

The second line was to be filled by the new Territorial Force, estimated at 12,000 officers and 300,000 men and formed on the old Volunteers and Yeomanry. It was to be a non-professional citizen force, receiving partial training in peace and fuller training on mobilization. In short, it was designed to provide support and expansion for the Regular Army, by supplying garrisons for naval and other fortresses, and, by *voluntary agreement*, to furnish units to expand the Expeditionary Force overseas. It was further designed for home defence and to create a sense of internal security. Its organization was, therefore, to be the same as for the Regular Army, and it was to be composed of fourteen Divisions, each Division to be complete in itself. Divisional Commanders were to be Regular Major-Generals assisted by a Regular Divisional Staff. Fourteen Mounted Brigades were to be formed from the existing Yeomanry Regiments, and Divisional and Army troops were to be raised on a proportionate basis. The Territorial Force Divisional Areas were to be those of the existing military districts. The reorganization can be summarized by saying that the Militia was moved up into the first line and renamed Special Reserve, whilst the Volunteer Force was moved up from third line to second line and called the Territorial Force.

A few words are now required about the training and administration under its provision. Territorial Force Divisions were to be under Commanders-in-Chief for training, but under County Associations for administration. And it is upon the administration by County Associations that I wish to dwell rather than upon the training. A County Association was to be, and still is, responsible for the civil and financial administration of the units in its area except when they are at annual training, embodied, or on actual military service. Its function unchanged is to raise the quota by voluntary enlistment and hand it over

equipped and complete, when required for training, under the orders of the Commander-in-Chief of the Command. For this purpose, an Association receives certain grants from army funds which it can apply within wide limits. I will deal later with the composition of County Associations. This in outline was Mr. Haldane's reorganization of 1908, and thus did our military forces at home find themselves on the outbreak of war in 1914. But I wish to remind my audience that the Territorial Force soldier could not be compelled to serve outside this country unless he specifically volunteered to do so. Before passing to the period of the War, it is well to remember that Lord Haldane had been created a peer in 1911, and had become Lord Chancellor in 1912. He had been succeeded at the War Office by Colonel Seely (now Lord Mottistone).

THE WAR OF 1914-1918

The War came and found this country with her land forces better organized and trained for the job in hand than had ever before been the case in her history. An undying debt of gratitude is due to Lord Haldane. But the Irish crisis of that year had resulted in the Secretary of State for War and the Chief of the Imperial General Staff resigning their appointments ; and the Prime Minister, Mr. Asquith, had himself doubled the role of Prime Minister and Secretary of State for War. This dual role was only possible as a temporary expedient in peace, and was obviously quite impossible in war. So one of the very first things that the Prime Minister had to do was to find someone to relieve him at the War Office. By mere chance Lord Kitchener happened to have arrived in England from Egypt in July intending to stay until September. Hardly had he set foot in England when Austria was presenting unacceptable demands to Servia, and he saw behind those demands the German menace which he had so long foreseen. He could look back with satisfaction upon his share of preparing the Empire for whatever might lie ahead. He had left India prepared for war as never before ; he had helped to win for us the heart and hand of South Africa ; the complete military organization of Australia and New Zealand were due to his advice ; and in Egypt he had made us secure. On 31st July, all heads of Missions were ordered to return to their posts and Lord Kitchener prepared to return to Cairo. On 3rd August, he embarked on the channel steamer whence he was recalled by the Prime Minister. The fact that the Prime Minister offered the post of Secretary of State for War to Lord Kitchener is generally attributed to the persistence of Lord Northcliffe and the insistence of the British public. But it is not so generally recognized that it was pressure from Lord Haldane that finally decided the Prime Minister in his choice. Now Lord Kitchener

was one of the very few who at this time visualized a war of years as opposed to a war of months, and it is on record that on the day he entered the War Office as Secretary of State for War he had made up his mind that Great Britain should put seventy Divisions into the field. Towards this huge army he found in hand the Regular Army, entirely satisfactory except in regard to size : and the Territorial Force, only partially under War Office administration, and partially under County Associations, not equipped to take the field, and not liable as a complete force, to be sent overseas ; a force moreover specially designed for home defence, and to repel invasion. He decided, therefore, to obtain the extra forces required by raising what were in those days known as "Kitchener's New Armies," and not by using the Territorial Force as a means of expansion. That decision has very naturally been the cause of much criticism amongst Territorials past and present. A pledge has been given that in any future war the Territorial Army will be the means of expansion, if expansion there is to be, so the Territorial Army will not again be made to feel that the steps its personnel take in peace, to train themselves for war, will be made to look of less practical value than the act of volunteering for service under the emotional strain of a national crisis, by those who have done nothing to fit themselves to meet that crisis. The future is, therefore, free from the errors of the past in this respect. But may I remind you that the Territorial Army *is* liable for service overseas, whereas the Territorial Force was *not*. Surely this was the vital factor which made Lord Kitchener commence the raising of the New Armies ?

But whatever the cause, the Territorial Force felt aggrieved. Despite the fact that the Territorial Force did not form the basis of military expansion it did perform all, and more than all, that was expected of it in other respects. Territorial Force units were sent to India and the Colonies to relieve Regular troops, which were thus brought home to form the 27th, 28th and 29th Divisions in 1914. But here again the personnel of the Territorial Force had cause for grievance, when the net result of their having been Territorials in 1914 was that they spent the next four years of their lives on garrison duty in India ! After the quick despatch of volunteering Territorials, to relieve overseas garrisons, whole Territorial Force Divisions were sent to various fronts, the East Lancashire, Home Counties and two Wessex Divisions embarking for service before the end of 1914, and nine other Divisions going overseas as complete formations in 1915. Possibly a squadron of the Herts Yeomanry went furthest afield, forming the Divisional Cavalry to the 13th (New Army) Division in Mesopotamia. In all, twenty-nine Territorial Force Divisions served overseas as such, as opposed to thirty New Army formations. But I rather deprecate such figures of comparison.

as all formations went to the making of the British Army which finally reached the size originally intended for it by Lord Kitchener.

AFTER THE WAR

The conclusion of the War left the belligerents, whether victor or vanquished, in a state of mental and material exhaustion. In 1919, the policy of the Government—upon which military preparations must depend—was to rule out of consideration any major war for a period of ten years, that was to say, up to 1929. Happily that policy was justified, but the margin once or twice was a bit thin. The better part of a Division was sent to China in 1927, and "incidents" were not infrequent. But during the period of quiescence allowed by the Government policy, the Army Council could hardly do more than cling to what the reduced Army Estimates made possible in the way of the older arms, whilst they spent money on experiments with new weapons and formations. A Regular Army of a different shape is evolving as a result of these years of experiment. Meanwhile, however, the Territorial Army appears to mark time. But has any other policy been possible within the restriction of reduced military budgets, and having regard to the rapid growth of aircraft, of mechanized vehicles in civil life, and the disappearance of the light-draught horse?

Then came the jolt to our complacency to which I referred in the first part of my lecture, and the change of policy by the Government, from one of hopeful example in disarmament to one of active rearmament. That is where we stand to-day. The Territorial Army remains in much the same shape as it was at birth. There have been a few important changes, as for instance, the fact that the Territorial Army has now accepted obligation to serve anywhere overseas, that the name has been changed from Territorial Force to Territorial Army, and, more recently, that this Army has taken over new responsibilities in our military organization in coast and anti-air defence, and now has its Director on the Army Council, with two Territorial Army assistants, one a Major-General, and, more recently, has been given more high posts for its own personnel.

But twelve of the fourteen Divisions remain the same in organization and location as they were in Lord Haldane's day. Is that as it should be? It is very easy to ask that question and to reply in the negative, but things are moving. Let us spend a few moments applying Lord Haldane's method of asking first of all "What is the Peril"? and then—but not until then—trying to design an instrument calculated to guard against that peril, bearing in mind that the instrument must be forged from the military structure we now possess without rendering that

military structure insecure during the process of alteration. What is the peril? The peril in 1906, as seen by Lord Haldane, was the risk of the Channel ports falling into German hands. For this he designed an Expeditionary Force, to go overseas to forestall the Germans, and a second line Territorial Force for home defence and as a means of expansion. A peril of a similar kind seems to me to be with us still, if in a different form. What then should be the shape of the Territorial Army? Its first function was defence against invasion. Is not invasion even more probable, not over the water admittedly, but from the air? And has not one-sixth of the Territorial Army already been converted into formations to deal with this sort of invasion in close co-operation with the R.A.F., and may not more of it be so converted?

Remembering that its remaining function is expansion, how should the rest of it be organized? Obviously it must be organized on the model of the Regular Army, but not necessarily so in all details. The Regular Expeditionary Force must stand or fall by what it is when war comes, so must those Territorial Army units organized for immediate home defence. But those Territorial Army Divisions earmarked for early embarkation as formations can be certain of being used as divisions and need not be organized exactly as the Regulars who have to be available to go on Empire Policing in smaller formations or even as isolated units. I have no time to speculate further on the eventual shape of the Territorial Army, but it is, as I see it, evolving according to its role in the altered conditions of to-day, but it is becoming, and in parts has already become, not a second line but part of the first line.

COUNTY ASSOCIATIONS

I venture to suggest that the methods of the County Associations require overhauling to prevent those delays which now so often occur in administrative affairs which are a hindrance to the smooth working of a second line, but are a positive national menace if allowed to continue with a first line. There are ninety County Associations, and as the Commander of the 51st (Highland) Division I had to deal with twenty-one of them. I mention this to show that I have some experience of County Associations. Of these twenty-one Associations, a quarter dealt with a unit the size of a company or less. Reforms in, for instance, the storage of kits in drill halls desired by a commanding officer and personally recommended by myself, could not be made applicable to a whole battalion merely because one Association administering a portion of it did not like the idea. In another instance the move of a battalion H.Q. from an isolated locality to one more central and in all practical ways more convenient and efficient was prevented because one Associa-

tion had made a sentimental bargain years ago with another Association, that the H.Q. of this battalion should always remain where it was ! I have tried to keep off details in this lecture, but I must quote these few, in support of my contention that the workings and powers of the County Associations require a thorough overhaul. One reform I would suggest at once, and that is an overhaul of the Military Members of the County Associations. To be fit to sit on such an Association, as a military member, it is essential to my mind that the individual must be up-to-date as a soldier. If an ex-Regular or ex-Territorial is not of sufficient importance locally to be on the Association as an ordinary representative or co-opted member, I am definitely of the opinion that he had better not be on it at all. The Military members should, in my opinion, be found from serving Regular and Territorial Officers who are up-to-date as soldiers, and should equal in numbers the representative and co-opted members combined. It is very strange to find that an Infantry Brigade Commander is not a member of an Association at all in most cases, and the Officer Commanding Royal Artillery never, whereas in my opinion, both should, as Military Members, definitely be on every Association which administers any portion of a unit under their command. Before leaving this subject I want to pay a personal tribute to the very kind way I was always treated by Chairmen and Secretaries of County Associations in the Highlands. And perhaps, it is good for a Major-General to have to humble himself, and get what he wants by cajolery and not by violence ! But cajolery takes a long time, even with members of County Associations, and with first-line units time is the one thing which cannot be spared.

CONCLUSION

A shortage of recruits for the Regular Army is disquieting, but, to my mind, capable of reasonable and unashamed explanation. I will not wander into the field of speculation about the means of improving Regular Army recruiting, which is irrelevant to my subject. But I have introduced it, in order to make the point that, whereas the shortage in the Regular Army is explainable as a shortage in a temporarily unpopular profession, the shortage in the Territorial Army strikes at the roots of our national characteristics, handed down from feudal times. It is a reversion to the XVIIth Century, when the creation of a Regular Army was looked upon as the means for others to concern themselves solely with their private affairs. This was an attack on the principle that the State has a claim upon the manhood of her sons. That unfortunately is the condition to-day. That is far more disquieting to me than the shortage in the Regular profession of arms, which must compete with other professions for its employees. Many causes have brought

about this condition, and I have no time to deal with more than one of them in the few moments left to me. That one is "Pacifism." I wonder how many of the people who use that word, either as a panacea for all ills or as an expression of contempt, have ever taken the trouble to look up in a dictionary the meaning of the word they so glibly use. May I give you the meaning as shown in the Oxford Dictionary?

Pacifism : "The doctrine that the abolition of war is both desirable and possible."

I think that all grades of sane men in all grades of society will agree that the abolition of war is desirable. So there is no need to argue on that account. The next point is that the abolition of war is possible. Here I am an out-and-out pacifist. But I, personally, believe that there is, in the world as it stands to-day, only one way to make the abolition of war possible, and that way is for this great nation to be true to the traditions that I have tried most imperfectly to trace before you this afternoon, to see to it that she is strong ; strong not only in munitions but in the trained men capable of using them. I believe that one of the greatest incentives to peace in the world would be for the Foreign Press of all nations to be compelled to publish the fact that the Territorial Army in this country was up to strength and had a waiting list. I am an Englishman, but I am proud to be able to point you an example in that magnificent Highland Division which so recently I had the honour to command, with a strength in officers and men of 93 per cent. and 96 per cent. respectively. I am not a visionary. It *has* been done in the Highlands. It *can* be done elsewhere.

DISCUSSION

MAJOR N. MACROBERTS : I would like to remind the Lecturer that in London, to-day, another Force is being created—a fourth line of defence—namely, the Air Raids Precaution Services. As one who is responsible, in a passive sense, for one of the great metropolitan Boroughs of London, I also am going to require troops, and I am not going to have the casts-off of either the Territorial Army or of the Regular Army. I want young men, because anyone who has had to wear full protective clothing for two hours and has had at the same time to carry on heavy manual labour will know that the work calls for young men and not old men or even middle-aged men. Therefore I suggest that, as regards recruitment for the Territorial Army and for the Regular Army, for which we know that many more recruits are still required, one has to remember the needs of this other Force. I myself shall require 2,500 men for my own particular metropolitan Borough. It seems to me that the time has come when we have to face the whole matter practically as ordinary common-sense men ; find out exactly what the full man-power of the country will be, and then allocate it as demands and the situation require.

THE CHAIRMAN : I would only say on that that the policy of the Government is that the older men should go into the Air Raids Precautions Force.

LIEUT.-COLONEL L. V. S. BLACKER, O.B.E.: One aspect of the development of the Territorial Army has very commonly escaped notice, and that is that all the predecessors of our Territorial Forces have always been protagonists of new and modern weapons in each age. It is typical that our oldest Regiment—the Honourable Artillery Company—is at the present time armed with quite a modern quick-firing howitzer and light dragons; whereas the three oldest Regular Corps (the Yeoman Warders of the Tower, the Yeomen of St. James' Palace and the Gentlemen-at-Arms) are still armed with halberds. The volunteers of 1859 were essentially riflemen when the professional was still clinging to the smooth bore. In the South African War the only quick-firing batteries on our side were those belonging to the Volunteer artillery. In 1914 the Force which did most to introduce the tank were our comrades of the Royal Naval Volunteer Reserve. Nowadays the Territorial Army officer, whose predecessors have done so much for the modernization of the technical side of the Army, is in closer touch with industry and with engineering and scientific development than ever he was. It is the duty, I suggest, of the Territorial Army officer to interest himself in these matters and to make available for the Army as a whole that knowledge and that experience which the Regular cannot possess. In that way he may in the future be of the value which he has been in the past.

THE CHAIRMAN

The Lecturer has put his finger on a very important point, namely, the responsibility formerly borne by the great landowners, not only for recruiting but also for equipping the men raised to defend the country. This responsibility has in the main passed to the great employers of labour, and in place of supplying arms and equipment we ask them to encourage recruiting by giving their men holidays with pay, and I am glad to say that in very many cases they are doing so.

He has also referred to the Territorial Army Associations, raised under the ægis of Lords Lieutenant. This also is an historic function and is provided for in the Act under which the Territorial Army was raised. The system has great practical advantages; the composition of the Associations—representative of the varied interests in the county—should ensure a knowledge of local conditions which Regular commanders or staffs cannot hope to acquire until they approach the end of their tenure. An Association should be representative not only of all local interests but of all local political parties, thereby stressing the non-political aspect of the Territorial Army. The Associations also emphasize the essentially citizen quality of the Territorial Army, which again should prove a factor favourable to recruiting.

There are objections, I think, to the Divisional Commander and the Brigade Commander being in the Associations. It might happen, for instance, that a Divisional Commander would attend an Association meeting and find himself opposed by his own Battalion Commanders; or, alternatively, his own Battalion Commanders by not opposing him might see something passed of which they did not approve. In the administrative sphere, Associations have one great advantage which is not shared by Regular Army administration, and that is that at the end of the financial year grants do not lapse. Also, generally speaking, it is fair to say that more latitude is allowed to Associations in the administration of their grants than is permissible under Regular Army Regulations, and this enables them to ease the shoe where it most pinches.

General Brownrigg emphasizes, with justifiable pride, the great strength of the Highland Division. Without in any way wishing to belittle its splendid spirit, it is

only fair to others to point out that the units in that Division do not, for the most part, suffer to the same extent from the many counter-attractions which exist elsewhere, such as cinemas, dance halls, charabanc excursions, holiday camps by the seaside, all making a greater appeal than soldiering to the lady in the case. Nor do they suffer to the same extent by competition from the demands by St. John's Ambulance, special constables, Air Raid Precautions, the Royal Naval Volunteer Reserve, the Auxiliary Air Force, the Balloon Barrage and other wholly admirable activities now being developed in the South. It is a source of great satisfaction that, in spite of these counter-attractions, the London Area has recently made greater proportionate progress in recruitment than any other part of the country.

It is also satisfactory to note that the Territorial Army is to-day stronger than it has ever been since the War, and that it is practically up to the establishment which was required two and a half years ago. Further, that the men now in the Territorial Army are all active, keen members, fully carrying out their obligations, and that units no longer carry any paper strength. Whilst, however, we may well be pleased with the progress made, we cannot afford to relax our efforts in any way.

With regard to reorganization and re-equipment, the Lecturer gave some indications as to how he would carry out this task. I wish to stress the point that those are not necessarily the views of the Army Council. You have to remember that reorganization and re-equipment have to go hand in hand. We do not want to have the Territorial Army organized and training with a large number of various coloured flags representing imaginary armaments. I am sure that the Lecturer, now that he has been at the War Office for a short time, will know that this question of reorganization and re-equipment is not a mere figure of speech but that it is under very active consideration. But there is always bound to be a certain time lag. There is, however, one ultimate factor which controls the question more than anything else, and that is the financial aspect. Here the whole of the burden rests on the shoulders of the Secretary of State, and I am sure he has both your sympathy and your confidence in his heavy task.

The customary votes of thanks to the Lecturer and Chairman were passed by acclamation.

THE LEGALITY OF AERIAL BOMBARDMENT¹

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On Wednesday, 2nd March, 1938.

ADMIRAL SIR REGINALD G. O. TUPPER, G.B.E., K.C.B., C.V.O.,
in the Chair.

THE CHAIRMAN introduced the Lecturer.

LECTURE

THE question which I wish to propound and answer in this lecture is the simple one of the extent to which the use of aircraft for bombardment is legitimate in accordance with the principles of international law. It is important that, at the outset, I should make it clear that I am not concerned with two other questions about which much has been written in recent years, namely : (a) whether it is desirable, in the interests of civilization, to abolish bombardment of civil populations ; and (b) whether it is advisable, at the other extreme, to legalize the practice of air bombardment and use it as an argument for the total abolition of war and its horrors.

On the first of these questions, that is to say, whether it is desirable in the interests of civilization to abolish bombardment of civil populations, ever since the War there has been an incessant current of rhetoric focussed upon the terrible threat to civilization which must be the inevitable concomitant of unrestricted air bombardment. With this I am naturally in sympathy, in common with everyone ; and if I thought that one word which I could utter would add any weight to the unanswerable arguments which have been put forward in every country of the world, I would gladly devote the time at my disposal to this task. "European civilization," says Professor André Mayer (in his contribution to a series of essays, entitled "What would be the Character of the Next War," published in 1933), "is a fragile thing. It might disappear. It is important that the men and women of Europe should know this. They hold in their hands now, and will hold to-morrow the means of destruction sufficient to shake and perhaps destroy this civilization. It is for them to decide whether they will turn the weapons

¹ This Lecture was delivered and appeared on the Programme under the title : " International Legal Aspects of Bombardment by Sea and Air."

of science against themselves and use them to commit suicide." That is only a single quotation where a thousand might be given. But I am not here concerned to do more than express my own horror and dismay at the threatened developments in air warfare.

Nor am I going to take up time in dealing with the arguments of those who contend that there can be no effective solution of the problem without either the total abolition of war or some general disarmament pact, although it is on this aspect of the problem that most interest has been concentrated in the years that have passed since the War. The hopes which idealists placed in the League of Nations have been shown to be illusory. The League itself, based upon the false theory of State equality, of a democracy amongst nations, has now degenerated, many of us think, into an alliance of the chief anti-religious forces of the world, and is therefore the worst possible protagonist in the struggle for the supremacy of law in international relations; for in the maintenance of the Christian ideals is to be found, in the future as in the past, the essential condition of that humanitarian spirit which is the ultimate foundation of the international law of war. We have seen also that no reliance is to be placed upon Covenants. More than one State which has solemnly agreed not to resort to war has taken up arms and appears to think that its action is consistent with its promise, provided that it does not expressly make a declaration of war against its neighbour. The lack of trust between the nations has made the solution of the problem by way of disarmament pacts impossible of attainment—another sad lesson of recent experience.

As I have said, I am not going to deal with those problems, which are really more for the politician than for the lawyer. My object is a simpler and narrower one. I am not asking what ought to be the state of the law: I am asking what is the state of the law. Is it true that international law, at this stage of its development, permits the indiscriminate bombardment of non-combatants? Is it lawful for a warring nation to attack the old men, women and children living in the great cities of the modern world and already sufficiently troubled by the sorrows of war, in which their young male kinsmen suffer death and mutilation? Is it lawful for force to be applied by military weapons to defenceless civilians?

If the question, stated in this way, is to receive an affirmative answer, it would seem to be obvious that, if international law permits this outrage upon all humanitarian instinct, it can be of little service in the progress of the world. But I believe that, although most writers upon the subject, obsessed with the idea that it is impossible to prohibit the use of any weapon which may have a decisive effect in breaking the

morale and the will of the enemy country, have admitted, however unwillingly, the legitimacy of aerial attack upon great centres of population, nevertheless the truth is that these experts have lost sight of some of the fundamental principles of international law ; and it is my object in this lecture to emphasize these principles and to submit to you the general proposition that if these great general rules are kept steadily in mind there is hope that International Law of itself—unaided by multi-lateral Conventions—can solve, or indeed already has solved, what is the most terrifying and the most pressing problem of the generation into which we are born.

FUNDAMENTAL PRINCIPLES

The two fundamental principles of international law which I wish to put forward and which may perhaps be two aspects of the same principle, are (*a*) that war is between the fighting forces and not between the civilian populations, and (*b*) that the lives and security of non-combatants are sacrosanct. I will deal with these in turn.

Perhaps the most appalling suggestion that has been made by some learned writers, looking back at the experiences of the War, is that an end has come to the time when it was true to say that war was a contest between the armed forces of the contending States. It is suggested that the whole nature of war has altered as a result of the practice of nations between 1914 and 1918. We need not go further for evidence of this than our own writer, Oppenheim. In the first edition of his work on International Law, published in 1906, using the clearest possible language, he says : "It must be emphasised that war nowadays is a contention of States through their armed forces. Those private subjects of the belligerents who do not directly or indirectly belong to the armed forces do not take part in the armed contention ; they do not attack or defend, and no attack is therefore made upon them. This fact is the result of an evolution of practices which were totally different in former times. During antiquity and the greater part of the Middle Ages, war was a contention between the whole of the populations of the belligerent States. In time of war every subject of one belligerent, whether an armed and fighting individual or not, whether man or woman, adult or infant, could be killed or enslaved by the other belligerent at will. But gradually a milder and more discriminating practice grew up, and nowadays the life and liberty of such private subjects of belligerents as do not directly or indirectly belong to their armed forces are safe, as is also, with certain exceptions, their private property. This is a generally admitted fact." That was written in 1906, and those words are reprinted in the post-war editions, but there is added the ominous

paragraph No. 57 (a), which, in the fourth edition (i.e., Professor McNair's version), indicated four reasons why the pre-war attitude was assumed to have changed.

In the first place, Professor McNair says: "Wars are nowadays fought by whole nations in arms. Not only has conscription carried the day, the whole male population of military age being enrolled in the fighting forces: all other men and all fit women are asked, or even compelled, to assist the fighting forces as workers in munition factories, and to undertake all kinds of other work, so as to release fit men of military age for the armies. During the World War, thousands of women were enrolled and sent to the front as cooks, drivers, storekeepers, etc., for the army, to take the place of soldiers previously so employed. Russia even admitted women into the ranks as soldiers."

With regard to that argument, there is no doubt that if women are enrolled in the combatant forces they cannot claim the privilege of that immunity from military onset which is the right of the civilian population. But it is a far more doubtful assertion that, merely because a man or a woman is asked, or even compelled, to work in a munition factory, he or she should lose the character of being a non-combatant. The chivalry of the Middle Ages, which in those unregenerate days would not have objected to the wholesale slaughter of prisoners and wounded, at least would have spared the woman who was employed in sharpening arrow-heads or who gave her long hair to make bow-strings. What has happened since then to change the character of those who work behind the fighting front? Why should the processing of steel in its early stages of manufacture make the unfortunate worker a more lawful target for the aerial bomb than the shepherd or the swineherd who now, as at all times of the world's history, has provided the food upon which the fighting forces are sustained? International law, I think, should resolutely repel the suggestion that munition workers are part of the fighting forces, for it is simply untrue to say that they are.

Professor McNair's second argument is based upon the development of aerial warfare. "The fact," he writes, "that it has been considered legitimate for air-vessels to bombard, outside the theatre of war, munition factories, bridges, railway stations, and other objects of value for military communication and preparation, must necessarily blur, or even efface, the distinction between members of the armed forces and civilians. Air-vessels cannot aim with any precision at their direct objectives; and if they undertake bombardment by night such aim would seem to be entirely impossible." The argument that it has been "considered legitimate" to bombard factories, railway stations and so forth, is, it need hardly be said, a *petitio principii*. My argument is that the whole of

such bombardment is illegal, and it is no answer to say that it has been indulged in and justified by law-breaking States.

Thirdly, Professor McNair says: "Democracy has for the most part conquered the world, so that wars are no longer dynastic but national. Governments are supposed to be representative, nations are supposed to be responsible for their Governments, and wars have therefore become wars between all the individuals of the warring nations." To this it seems to be a sufficient answer to say that, if democracy at war entails or justifies the hurling of a shower of bombs upon innocent persons, it is for the people to say whether they would not rather return to some system of absolute government which would, at least, deliver them from this type of murder. The adoption of a particular form of constitution by one State cannot be held to entitle it or its enemies to disregard rules of international law, which are permanent and independent of the internal organization of any country.

Professor McNair's last argument refers to the enormous development of international means of communication for commerce and industry. "To put economic pressure upon the enemy has always been legitimate; but, whereas in previous wars it only played a secondary part, during the World War it became of primary importance. The consequence is that, although war still is in the main a contention between States by their armed forces, the civilian population nowadays is exposed to extreme suffering in health and property."

If it be argued that air attack upon civilians is justified because in the late war economic pressure upon the civil population was a determining factor, it need only be pointed out that for many generations before the invasion of Belgium in 1914 the right to use naval supremacy, whether won in a great naval battle or by the admitted superiority of the belligerent's fleet, for the purpose of putting pressure upon the defeated State, had become an unquestioned rule in the law of nations. Sea warfare would be ineffectual if it did not provide the victorious Power with this advantage, slow in its incidence though it may be. There is nothing novel about this aspect of the control of the sea. Never before has it been argued that the lawful interception of contraband goods was in any way parallel to the infliction of immediate death and injury upon the inhabitants of a great city by intensive attack from the sky. In other words, international law has always permitted and regulated the suppression of hostile trading as one of the main ends of war, but it is surely entirely illogical to conclude from this that a successful campaign at sea should justify the hurling of death and destruction upon the subjects of the strong maritime Power.

The result, then, is that we must entirely reject the argument that

the nature of war, viewed in the light of the episodes of the fearful struggle of Germany against the world, has in any way been changed. The sufferings of the civilian population may have been intensified by the influence of naval supremacy, but that is a difference of degree, not of kind ; whereas, if it is sought to deduce from the greater success of this economic pressure in the late war any right to deliver a direct assault upon the non-combatant citizens of the enemy State, the reasoning is grossly at fault. History and philosophy combine in their condemnation of the view that the non-combatant populations are to be identified with the fighting forces, and it is the duty of international lawyers throughout the world to unite in protection of innocent citizens against any such assertion. The distinction between the old men and women and children, who remain in their homes throughout the struggle, and the fighting forces is a distinction of kind, and not merely of degree, and it should be and is a fundamental principle of international law that these innocent members of the belligerent community should be immune from the direct military onslaught of the enemy forces, whether they be armed with rifle or machine gun or aerial bomb.

That is my first proposition, namely, that it is false to say that war is now between the civilian populations. The position remains exactly the same as it was in 1906, when Oppenheim wrote the words which I have quoted.

I turn now to the second of my fundamental principles, which, as I suggested, is perhaps only another aspect of the first principle. International law has always held that the lives of non-combatants are sacrosanct. There is no further evidence required for that than that every book of international law written before the War, in Germany or in this country, would have admitted the truth of this proposition. We in England, the home of Lord Stowell, are naturally proud of the contribution that we have been able to make to the development of international law in maritime warfare. Before 1914, so far as the sea was concerned, no one ever doubted that any form of attack upon merchant shipping which involved the sacrifice of a single life was entirely and utterly illegal—I put aside the case of the merchant vessel which offers resistance. Germany, under terrible stress and in her own eyes justified by her right to retaliate, was the first nation in the history of the civilized world to put in jeopardy the lives of sailors doing their duty in the navigation of the seas. Germany has now admitted that her policy in this respect was wrong. It was a vital moment in the history of international law when, in 1936, her rulers decided to accede to the *procès verbal* declaring the validity of Part IV of the Treaty of London, 1930.

I would remind you of what the Treaty of London says on this point.

It was agreed that a submarine, in relation to merchant ships, "must conform to the rules of international law to which surface vessels are subject. In particular, except in the case of persistent refusal to stop on being duly summoned, or of active resistance to visit or search, a warship, whether surface vessel or submarine, may not sink or render incapable of navigation a merchant vessel without having first placed passengers, crew and ship's papers in a place of safety. For this purpose the ship's boats are not regarded as a place of safety unless the safety of the passengers and crew is assured, in the existing sea and weather conditions, by the proximity of land, or the presence of another vessel which is in a position to take them on board." That is what Germany and, I think, thirty-seven other nations since 1936 have acceded to.

I doubt whether any nation has ever rendered such a service to the cause of law and justice in international relations as Germany has rendered in this matter, for nations are not inclined to admit that in their previous conduct they were in any way, legally or morally, at fault. Yet Germany has now frankly declared before the whole world that submarine attacks upon merchantmen are unjustifiable. And why? Simply and solely because such attacks cannot be carried out without jeopardizing the lives of men—not, as a rule, of women or children—who sail the high seas as servants of the shipowners carrying on their lawful business of exchange of commodities between one State and another.

My point is a very simple one. Why should non-combatant life upon the high seas be sacrosanct when a female worker in a munition factory, contributing but a fractional part to her country's success when compared with the value of a ship's voyage, can be killed by the discharge of a bomb from a height of 18,000 feet? If civilization is at stake—and it is at stake—are not we going to admit that the rules of sea warfare are the right rules? Are not we prepared to say that, if international law places an embargo upon the use of the submarine, simply because it must involve risking the lives of innocent seamen, it must also, by virtue of every logical process, condemn any type of air bombardment which may involve the death of a single civilian? Why should not the line of demarcation between combatant and non-combatant be drawn as clearly on land as it is on the high seas?

This line of argument is fortified when we consider the problem raised by the use of aircraft for the purpose of attacking enemy trade on the high seas. This question was not, of course, dealt with by the Treaty of London, though it is rather difficult to see why the prohibition of submarines should not have been extended, by a parity of reasoning, to aircraft. But it happens that the position has been exhaustively analysed by two leading English authorities: Dr. Spaight, in "Air

"Power and War Rights" (1933), and Professor H. A. Smith, in "Aircraft and Commerce in War," published in the British Year Book of International Law for 1936. Dr. Spaight concludes that direct bombing of a merchant vessel for the purpose of compelling her to obey orders should be definitely prohibited, and Professor Smith states that "if urgent military reasons make it impossible to send the prize into port she may be destroyed, but there is an absolute duty," he adds, "to make provision for the safety of the crew, the passengers and the papers. . . . Aircraft, unaccompanied by warships, can do nothing effective unless they destroy merchant ships at sight, and the use of aircraft in this manner would therefore raise the same issue as was presented by the 'unrestricted' German submarine campaign of 1917. . . . The control of enemy commerce at sea is a right which can only be exercised by ships." The draft proposals put before the Hague Committee of Jurists in 1922, by delegations representing Great Britain, the United States of America, France, Italy and Japan, though they differed in other respects, unanimously agreed upon this fundamental rule, that the crew and passengers must be placed in safety. Again, we ask, why should such sedulous care of human life be demanded in maritime warfare, and, in this case, air warfare, if it be lawful on land to decimate whole cities from the air?

We can take another analogy from the accepted rules of land warfare. Who has ever doubted that if a civilian, not enrolled in the fighting forces, takes an active part in resisting an invasion he is subject to the penalties of the *franc-tireur*? He may be shot at sight; he cannot claim the right, which the uniformed soldier has under international law, to surrender and become a privileged prisoner of war. What is the principle behind this rule if it is not that there is a clear and firm line drawn by the law between the fighting troops and the non-combatant civilians? That is precisely the proposition for which I am contending—that in war the struggle is between the uniformed forces and not between civilians; and that civilian life, which may lawfully be taken if the civilian, without proper authority and without the recognized accoutrements, fires upon the invader, is, in the absence of such justification, entitled to absolute security. Behind all the literature about the alleged German atrocities in Belgium there is a clear principle to be discerned: the life of a non-combatant must not be taken unless he has engaged in hostilities.

ADVENT OF NEW WEAPONS

Those are the two fundamental principles, but, before I pass on, I must deal shortly with the argument which is sometimes put forward that international law must lose all its force unless it recognizes the

advent of new weapons and admits their legality. "There is no record in history," we are told (these are General Macdonogh's words), "of the use of any effective and vital weapon having been prevented." On this I wish to make only two comments: first, that the prohibition of dum-dum bullets and of submarine warfare upon merchant ships—the general rule of international law now enforced by the *procès verbal*—seem to be just the illustrations we want to prove the falsity of the generalization; and, secondly, that it is a sufficient explanation of the lack of any precedent to say that there has never before been in existence a weapon which was bound to infringe the fundamental principles of the law to such an extent as is the bombing aeroplane.

Another way in which this pessimistic view finds expression is in such remarks as "New weapons require new law." That always seems to me to be entirely unsound reasoning, if it be meant to imply that the basic rules of international law must be displaced by some special *ad hoc* code of law whenever science makes a leap forward into some unexplored sphere. The old principles must still hold good, though their application to new facts may involve a departure in matters of detail. This is well illustrated in connection with blockade, which, in the early view, had to be conducted by a cordon of ships around the blockaded coast—a measure rendered dangerous if not impossible by the invention of submarines and aircraft; but, as Sir William Malkin has shown, the old conception of blockade can perfectly well be applied to modern conditions, in full compliance with the fundamental principle that to be binding it must be effective, without retaining any cruisers near the blockaded area. I mention the case of blockade only as an illustration of the way in which international law—in this respect exactly similar to our own common law—develops. It does not close its eyes to the ever-changing world of circumstance; it is prepared always to apply its principles to new conditions and new problems as they arise; but, in testing the legality of the solution offered, it must and it does adhere rigidly to the great root principles of moral and spiritual welfare which are its true foundation.

Put in a more succinct way—and this is really the whole point of my lecture—there is all the difference in the world between saying, on the one hand, that human non-combatant life must be preserved so far as military requirements allow, and saying, on the other hand, that military necessity justifies any form of warfare provided that non-combatant life is not jeopardized. There can be no doubt that the second of these propositions is the true one. In the next section of my lecture we shall see how international lawyers in the post-War period have tended to slip back to the first and faulty attitude.

NO ANALOGY BETWEEN AERIAL AND OTHER TYPES OF BOMBARDMENT

The opinions which I have expressed up to this point are in consonance with those of most international jurists, but I now turn to the discussion of matters in connection with which my views depart a long way from the doctrines which have been advanced in many post-war text-books. The solution ordinarily offered by recent writers upon international law, when they come to deal with the legality of air bombardment, is to treat it alongside of military and naval bombardment and to apply the same rules to all three types of warlike activity, extracting from various conventional agreements the principles which, it is maintained, should govern them. In other words, the legality of air bombardment is ordinarily judged by the same tests as those which were laid down in the Hague Convention for land and sea attacks. This deductive process I regard as completely deceptive. But, before I state my own views, it is necessary for me to trace shortly the history of these conventional agreements.

Taking first land bombardment : in this sphere the events of the Franco-Prussian War and the increasing range of artillery led the Brussels Conference of 1874 to include in its rules, which were never ratified, a declaration that open and undefended towns could not be attacked or bombarded ; that is to say, attack by infantry upon large centres of population and bombardment of those centres by artillery were to be confined to fortified places. I have no doubt that that extremely vague word " undefended " was, at this stage, simply intended by those who used it to be in antithesis to " fortified," that is to say, defended by definite military works occupied by troops charged with the duty of repelling the enemy attack. We shall see presently how the connotation of this loosely used word " undefended " has been altered in later discussions. The Hague Regulations of 1899 repeated the prohibition and added that an intended bombardment, even of a fortified place, should, if possible, be notified beforehand to the local authorities. In 1907 there were added the words " by any means whatever," which were thought to be sufficient to prevent aerial attacks on such places. That was the position at the outbreak of the War so far as Conventions were concerned, but, of course, it is constantly necessary, here as elsewhere, to remember that customary law must always be prayed in aid of the deficiencies of any attempted code. There can be no doubt, therefore, that bombardment by land artillery of distant towns—the bombardment of Paris, for instance—is utterly illegal, not only because such towns are, in the true sense of the Conventions, undefended, but also because it necessarily infringes the fundamental principle of the sacrosanctity of non-combatant life.

With regard to sea bombardment, the difference between the tactics of land and sea warfare, as has often been shown, naturally demands some distinction between the rules applicable to bombardment, for, while land bombardment is a preliminary to an assault upon and capture of a fortified town, naval forces cannot, in the ordinary way, seize a locality. It is interesting to remember that there arose a dispute in the year 1888 between our own naval authorities and Professor Holland, who contended that the naval manoeuvres of that year, which comprised imaginary bombardment of sea-coast towns, would in real war amount to a breach of international law. In 1907, Hague Convention IX conferred upon naval commanders for the first time the right to bombard military works even in undefended places, the necessity of prior warning being, however, emphasized. This introduced into the conventional law the conception of the military objective, and carried with it, *sub silentio*, the slight suggestion that such a bombardment could be carried out even though it might inflict loss of life upon the civilian population ; but, on the better view, such was not the intention of the rule, and the attack upon our East Coast towns by German warships has been universally condemned as conflicting with the general humanitarian principle.

With regard to air bombardment, as a matter of history—which is all that concerns me at the moment—it is interesting to recall that the 1899 Hague Conference unanimously decided to ban any kind of attack from the air, even upon the fighting troops. What a paradox it is that only forty years ago, when the only possible means of air attack was from the balloon, the nations were prepared to condemn the use of this method of warfare, even in the actual war zone, whereas in 1938 every country in Europe is busily occupied in devising means of protecting its innocent inhabitants from the terror of the skies ! The disastrous moment came in 1907, when the 1899 rule, which had been limited in its duration to five years, came up for reconsideration. We have not time to-day to enquire into the reasons why the attempt to renew the prohibition was ineffectual, but the proceedings of the Conference may be studied in Scott's Hague Conference Reports, Volume I, page 889. The result, it will be remembered, was a compromise under which the words “by any means whatever” were inserted in Hague Regulation 25, and, so far as conventional law is concerned, that is the last enactment. With the story of air raids in the War I am not concerned, except to say that, on the view which I am enunciating, there was not a single raid on any town behind the lines which was not a violation of international law, however much it may have been justified on grounds of retaliation.

THE HAGUE RULES DRAFTED IN 1923

A few words must be added as to the Hague Rules of Air Warfare, drafted in 1923, by representatives of the British Empire, France, Italy, Japan, Holland and the United States of America. Fauchille had suggested that the Hague Conventions, by the generality of their terms, could be applied to aerial war, and this, in effect, is all that the jurists attempted to do, blinding themselves, it appears, to the truth which should have stared them in the face, that the authorization of the bombardment of military objectives (Article 24 (1) and (2)) was bound to entail the terrorization of the civilian population and the injury of non-combatants, which, by Article 22, must not be the express purpose of the bombardment. Moreover, the term "military objective," which in naval bombardment had been carefully limited to a narrow range of permissible objectives, was under these proposed Rules widened to include all factories engaged in the manufacture of distinctively military supplies and all lines of communication used for military purposes. There was not a town in belligerent Europe during the War which could not lawfully have been bombed on the pretext that it was served by a railway line which was used for military purposes. Thus the golden opportunity which presented itself to these assembled jurists of striking a great blow for the benefit of humanity was lost, and indeed, if the rules had ever been ratified by the Powers, conventional law would have condoned outrages upon humanity, in future wars, infinitely more terrible than anything that happened in the late war. If reasons be sought for the attitude of these jurists, the only suggestion I can make is that the framers of these rules were overborne by the belief that the weapon of air bombardment would be used whether international law forbade it or not. But is this a legitimate ground for introducing, by innovation, principles which are fundamentally at variance with international law? Because there are criminals in a community, is it right for law to withdraw from the struggle to repress them? Is it right for the legislature to specify objects which they may attack with impunity and to admit, in effect, that might is right? Surely it is wiser to maintain principles, even though, through weakness of sanction, their non-observance cannot be adequately penalized. My point simply is that we must not, as international lawyers, waver one inch from what we think is right. Even if nobody observes it at all, we must not give up the principle. I maintain that the result of these Air Warfare Rules, if they were incorporated into the law of nations, would be to override, by conventional agreement, the fundamental principle that no hostilities are lawful, whether by land, sea or air, which involve the destruction of non-combatant life. I deny that they are or can be the law.

The fallacy lies, of course, in the attempt to apply to aircraft the

convention-made formulas—themselves vague and out of date—of land and maritime artillery. By its very nature, the aeroplane has potentialities for injuring innocent life and property which are quite impossible in the other arms. It is a new weapon, and it cannot be controlled by pretending that it has analogies with the old ones, any more than it can be claimed that its novelty justifies a departure from fundamental principle. War upon land must differ from war at sea, and international law, after many years of careful study, has built up a separate code of rules for each element ; but the use of the air by the fighting forces presents a third and even more distinct problem—the problem of rendering the use of air weapons consistent with the requirements of humanity, and that is a problem which cannot be solved by haphazard adaptations of the codes of maritime and land warfare. We have at the present time to work out the principles which are to govern the scientific inventions of the future. It may be that, a hundred years hence, an individual man will be able to fly with the ease and certainty of a bird. In wars fought in those days one may imagine a force of hundreds of thousands of men flying, under their own individual propulsion, into the enemy country. Are we going to lay down now that such a force would be excused for the indiscriminate murder of a whole population ? That, in effect, is what we are doing if we admit that innocent human life can be destroyed as an incident of an expedition to bomb a military objective.

I have now said enough to indicate my view that it is entirely wrong to attempt to apply to aircraft rules which were devised for the control of sea and land warfare in days when the range of artillery was infinitely less than it is now. But I must add a word about the terms "defended place" and "military objective," which have given rise to so much misunderstanding. When it was laid down that a defended place could legitimately be bombarded from the land, there is no doubt, as I have indicated already, that it was intended to confine the right to places actually under siege or investment, but the term "defended" is, of course, susceptible of a much wider meaning, and it is open to international lawyers to interpret it, in relation to air bombardment, so as to include every type of military preparation. A single uniformed soldier billeted in a town hundreds of miles from the tactical front might be held to be a defender of the town ; volunteers guarding gas works are technically defenders ; a single searchlight or an anti-aircraft gun would undoubtedly be sufficient to induce the airmen to treat the place as defended.

Again, the phrase "military objective" is equally ambiguous. As we have seen, it has been defined in the 1923 rules as including lines of communication and factories, and so its scope can be extended to

comprise any large centre of population. Also it must constantly be remembered that aircraft miss their objective far more often than they hit it. Dr. Spaight, who is as well qualified as anyone in the world to give an opinion on this matter, goes so far as to lay down that night bombing is safer for the civilian than raids conducted by daylight, for only at night can the flight be carried out at a low altitude. But night blinds us all, and it can scarcely be contended that the aim is really likely to be more accurate when all is shrouded in darkness. It is a *reductio ad absurdum* showing that a fallacy lurks somewhere.

In other words, there is absolutely no safeguard for innocent life to be discerned in the conceptions of the "defended place" and the "military objective." Belligerents will inevitably be advised by their legal experts that these words can be interpreted in the broadest sense, and it will be an easy task to keep within the letter of the law while the spirit of it is infringed in every way.

Further, a safeguard, which is enacted in both the land and the sea regulations, disappears from the Air Warfare Rules of 1923, presumably with the acquiescence of the jurists. I refer to the prior notification of the intention to bombard. Hague Regulation 26 (Land Warfare) lays down that the commander of the attacking force, except in the case of an assault, must do all he can to warn the authorities, and Hague Convention IX, as we have seen, declares that the naval commander must, before resorting to bombardment of the military objectives, give warning to the local authorities. It is obvious that such notification cannot be given to places a hundred miles away without putting the air defences on the alert and so rendering the attack a perilous affair. The right conclusion to draw surely is, not that aerial bombardment can be indulged in without warning, but that it is not in accordance with the spirit of the existing land and sea conventions, and that it is inhumane and illegal.

SOME ATTEMPTED JUSTIFICATIONS

As I have shown in the foregoing section of my lecture, I consider that international lawyers are wrong in attempting to draw an analogy between land and sea warfare on the one hand and air warfare on the other. I will now deal with certain types of justification which might be put forward. I put aside the argument, advanced by Herr Simons, that aerial bombardment of civilians is a counterpoise to the recognition by international law of the right to seize food ships coming to an enemy country by sea. I have dealt with this already in this lecture and also in a review published in the *Journal of the Royal United Service Institution* some eight years ago. Nor, of course, can inter-

national law accept the view that the weapon of air bombardment is legalized because it is particularly useful to continental nations ; it is not on grounds of expediency that legal doctrines can be determined. I do not propose to say anything on the iniquitous and often refuted doctrine of "military necessity"—*Kriegsraison geht vor Kriegsmanier*, except that I cannot find that any writer in any country has ever sought to justify under this principle attacks upon defenceless civilians. Finally as regards reprisals, it is only necessary here to emphasize that the right to retaliate is, in the sphere of air bombardment, of definite potential value, since a Government which authorizes an infraction of international law knows—as was illustrated at so many points in the War—that it is bringing upon the heads of its own citizens exactly the same terrorization which it seeks to inflict upon the enemy. *La riposte serait trop facile.*

Another alleged justification of air bombardment which requires closer examination is that put forward by Dr. Spaight in his *Air Power and War Rights* (Chapter X), namely, that it is lawful according to international law to destroy civilian property in the enemy country and that such an object may be achieved legally by aerial attack with high explosive and incendiary bombs, even at the risk of killing non-combatants. He would limit the right (a) to cases where the attack can be carried out without great loss of life ; (b) to non-residential property, such as railway junctions, factories, and so on ; and (c) to night attack, for at night these centres of human activity are frequently deserted. It is obvious that if Dr. Spaight's contention is right it destroys the value of the main arguments which I have suggested, but, in my submission, Dr. Spaight fails to make out his major premiss, namely, that destruction of civilian property outside the front zone is permissible. He admits that Hall is against him, but holds that Hall's views are "unduly narrow." Hall teaches that devastation of property is allowed only when it is a necessary concomitant of military action or when it is really necessary for the preservation of the fighting forces from destruction or surrender. I have always believed that Hall's opinion is right, and I find that it is generally confirmed in other works on the law of nations and by the express terms of Article 23 (g) of the Hague Regulations. Although one can usually find sporadic remarks in the books which will support almost every contradictory proposition, I am not aware of any other writer who has asserted that the private property on land of the enemy can be destroyed. Professor Lauterpacht's edition (1935) of Oppenheim's work on International Law, produced after Dr. Spaight had promulgated his opinion, reiterates Hall's views.

My conclusion, therefore, is that aerial attack upon cities, upon the

pretext of devastation, is illegal, quite apart from the certainty that no adequate safeguard of human life can be guaranteed. No parallel can be drawn with the law of sea warfare, for centuries of theory and practice have drawn a clear line of demarcation between enemy trade on the high seas and enemy property on land. We cannot in 1938 jettison settled principles of this sort in the effort to find a logical basis for the extension of air warfare to objects which cannot validly be attacked on the land.

LEGITIMATE SPHERES OF AIR BOMBARDMENT

I now propose to examine shortly the legitimate sphere of air bombardment, because it is quite obvious that a military weapon of that sort can be used for genuinely military purposes: I do not think that the total abolition of this form of warfare, which, for five halcyon years, from 1899 to 1904, was made a rule of the conventional law of nations, can be supported as a binding principle in the absence of international agreement. The use of gas and bacteriological projectiles, on the other hand, is clearly unlawful; quite apart from the Geneva Protocol of 1925, which has been signed, as you know, by almost every nation, the employment of poisons has always been vetoed by the customary law, and the Germans, it will be remembered, justified their use of gas not on the ground that international law permitted it, but on the ground that they were merely taking reprisal measures against ourselves and the French for using lyddite shells. But the same objection does not apply to high explosives, which practice, if not theory, has permitted in artillery warfare since the earliest times. That which artillery may lawfully attack is also a legitimate target for the air force. Aerial bombs can obviously be utilized against infantry and artillery concentrations in the front area, against ammunition and ration dumps and against the lines of communication, roads, railways and bridges, by which the troops move backwards and forwards from the theatre of operations.

Admitting this much, can we go on and say not only that it is desirable but that it is in law necessary to confine aerial attack to the territory in which military operations are in progress? The conception of a "zone of warfare" is a familiar one both in literature and in conventions, and we must give the Germans the credit for having always advocated that aeroplanes should not be used beyond that zone, save for reconnaissance. Only two years ago, in 1935 and 1936, Hitler twice went out of his way to express the hope that the German view on this issue would be adopted by the other nations. But "zone of operations" is an elastic phrase, and we must, as in all questions of international law, search for the principle upon which the detailed rules must depend. The aeroplane is a new factor in international law, and the problem cannot be solved

by crude borrowings from the practice of earlier times. Until 1914 no one had ever considered the legal difficulties that were bound to accompany the advent of this weapon, and in the throes of the Great War, when anything could be justified as reprisals, no one was likely to work out the applicability to the new situation of the old norms. As we have seen, most of those who have studied the question since the War have been obsessed with the idea that it was sufficient to adapt out of date conventions to the new arm. That will not do. The time is ripe to consider *de novo* to what extent international law authorizes the use of the air space hundreds of miles away from the scene of the campaign for warlike purposes. In a more concrete form, the questions that arise are whether it is consistent with the principles of the law for a continental Power to attack soldiers in training on Dartmoor, the headquarters of the Aldershot Command or the ordnance works at Didcot or Weedon. I have no doubt at all that it is desirable, in the interests of humanity, to suppress aerial attack from a distance upon such objectives as these, for the simple reason that it is only reopening the door to indiscriminate attack upon civilians. If a bombing flight is allowed to wing its way over enemy country in search of such targets by night, or at such a height that accurate aim becomes impossible, it would be tantamount to sanctioning a policy of terrorization. Accidents would inevitably happen and reprisals would inevitably follow, and we should be again in the evil circle in which the nations found themselves in the late war. That is the reason why I think that international law must condemn such incursions not merely as undesirable but as illegal—not only because it is desirable to confine military operations to the front areas, but also because the admission of this long-distance bombing must inevitably, sooner or later, entail illegalities. If my main thesis is right, that is to say, that the bombardment of towns from the air is illegal as being an infringement of the cardinal rule as to the inviolability of non-combatant personnel, it seems to follow as a corollary that no form of aerial attack is lawful outside the sphere where the fighting troops are engaged.

I must add, as a short postscript for the sake of completeness, that the bombing of enemy warships, wherever they are, must clearly be as legitimate an element in naval warfare as attacks upon the fighting troops upon land. As Dr. Spaight well puts it, "a warship carries its own zone of operations with it."

CONCLUSIONS

I can now draw my final conclusions. The position which I have reached is that no form of air bombardment is lawful which jeopardizes the life or limb or even the property of non-combatant enemy civilians,

unless they have chosen to expose themselves to the risk by remaining in the area of actual operations. This I believe to be the only answer that international law can return to the question which we are considering. It means that the use of the air for attack upon large centres of population, on whatever pretext, is absolutely forbidden by international law. I believe that anyone sitting down to think out carefully and without prepossession how the new weapon can be adjusted to the requirements of international law must reach this conclusion. Any other answer must conflict with the fundamental principles of the law as they have been stated and applied for generations. Any other answer must entail a return to the savagery of mediæval and uncivilized war. The great nations of the world must realize this. Their own populations demand protection. Their own military, naval and especially air force commanders would surely prefer a system under which they are definitely forbidden by law to murder and mutilate women and children. The fine chivalry of the airmen throughout the War as displayed towards their fighting opponents—Dr. Spaight has collected many remarkable instances—should not stop short at the uniformed enemy. Dr. Spaight characterizes as inhumane an attack upon an observer descending by parachute from a burning aeroplane or balloon, and Captain Hall speaks of it as being “as near the borderline between legitimate warfare and cold-blooded murder as anything could well be.” If that is the sentiment of air force experts, surely the flinging of bombs upon crowded areas, with the absolute certainty that widespread casualties must be caused to non-combatants, should be condemned as entirely inconsistent with the spirit of honourable warfare.

Those are the grounds upon which an appeal can be made, with every hope of success, not only to governments, whose prime duty is to secure the safety of their subjects, but also to the fighting forces. A consensus of civilian and military opinion upon the question should ensure universal support for the proposal which our Government is putting forward to obtain a general international agreement on the subject. Speaking in the House of Commons on 2nd February, on a motion that there should be an international agreement to co-operate in the prohibition of aerial bombardment of defenceless civilians, Mr. Eden said that the Government was making a very thorough survey of the subject before contemplating any initiative for approach to other Governments. He continued: “This survey, I hope, will be finished in the near future. The work is being done by the Departments under Government instructions, with the express intention of reopening the question with other Powers. Our objective is to get a general international agreement on this subject, and that is why this preparatory work is being done. The inquiry is being directed to the development

of aerial warfare, particularly in its relation to the bombing of the civil population. The Government feel it to be desirable that this motion shall go out to the world as an indication of the expression of the opinion of the House of Commons."

It is also interesting to note that in the White Paper on Disarmament published in 1932, the following appears under the heading of "Air Armaments": "There is no aspect of international disarmament more vitally urgent than the adoption without delay of the most effective measures to preserve the civilian population from the fearful horrors of bombardment from the air. The Government of the United Kingdom have already stated that they would be prepared to go to any length, in agreement with other Powers, to achieve this object. The proposal that all bombing machines should be abolished has been made from several quarters, and it has been claimed that the worldwide adoption of this proposal would in itself guarantee the final abolition of bombing. This, however, is not the case, for machines not actually designed for bombing may nevertheless be adapted and used for that purpose. What would be involved, therefore, is the entire abolition, by international agreement, of military and naval machines and of bombing (apart from the use of such machines as are necessary for police purposes in outlying places),¹ combined with an effective international control of civil aviation. The difficulties to be surmounted in achieving, by international agreement, such a programme are evidently very great, but His Majesty's Government are anxious to co-operate with the other chief Air Powers in a thorough examination into the practicability of so extensive a scheme."

There seems to me to be one very important point to bear in mind in negotiations between ourselves and other countries in regard to this matter. It is absolutely essential, to my mind, that we should open them with a firm statement that it is a rule of international law that any injury to non-combatants who have not exposed themselves to attack is entirely illegal. It is not, and must not be represented as being, a matter that requires to be regulated by a law-making Convention. It is the law, and all that is needed is restatement, not amendment, of that law. Treated as sources of international obligation, Conventions have defects:—

- (a) In the first place, the Convention may not be universally accepted, and the absence of the signature of one quite minor Power would in some degree weaken its binding character.

¹ The Prime Minister has stated that the question of bombing for police purposes would not be allowed to stand in the way of a general agreement.—EDITOR.

(b) In the second place, what man has made man can alter ; legislation implies that there is some novelty which may, under other conditions, be rejected. But there is no novelty in the rule which is being asserted. When it was infringed in the late war, by every belligerent, it was all the time a rule of law that was being violated.

(c) Thirdly, the working out of the terms of a Convention invariably means that experts from different countries are called upon to sit round a table, and in their minds there is inevitably the thought of the strategic interests of the nations which they represent ; the spirit of the discussions becomes contentious, attention is focussed on details of little importance, exceptions are made in this and that direction, and the final outcome is too often a confused document, where what is stated in one paragraph is disintegrated in the next, leaving loopholes everywhere through which, under the strain of war conditions, any clever lawyer can extract some justification for his country indulging in precisely the actions which it is the purpose of the Convention to prohibit.

That is why, in my opinion, it is so essential to keep the whole of this question away from expert plenipotentiaries and to leave it to be settled by the Governments themselves. What one would like to see—may it be something more than a dream—would be a meeting at Geneva of the actual heads of all the Governments in the world, there to lay down solemnly and in the clearest manner that it is and always has been a fundamental rule of the law of nations that in warfare non-combatants are not a prey for the fighting forces and that air bombardment of any kind, outside the actual fighting area, is inevitably an infringement of this great principle. What is at stake is the future of civilization. What is certain is the unanimous yearning of the subjects of every Government in the world that something may be done, and done now, to remove the awful threat of death and destruction which at any moment may be rained upon them from the skies. I believe that every community would wish its greatest personalities to take part in the negotiations which would result in that unequivocal assertion of the rule of law which alone can guarantee the happiness of the present and of the future.

In my audience to-day are representatives of every branch of the Services, and I should like to emphasize, in conclusion, that the problem before us is one which requires genuine co-operation between the lawyer and the fighting man. We often criticise one another. You attack us because you say we split our words, place ideals before realities and demand concessions which military exigencies make chimerical ; and we

complain of you that you are blinded by narrow, national conceptions and tend always towards the view that the law—a weak and sanctionless thing—must not be allowed to impede the requirements of strategy. But on this issue we must be at one. On our side we, as international lawyers, have to retrace our steps and return to fundamental principles, acknowledging that we have been in error in toying with such ideas as "military objectives" when we should have taught from the beginning that any attack by military weapons upon civilians is unlawful. On your side what is wanted is a definite recognition that soldiers, sailors and airmen detest a system of things under which they may be called upon by their Governments to use their weapons against the helpless inhabitants of the hostile country. You must expunge from your vocabulary such phrases as that the task of the air power is a political rather than a military one. On this issue law and arms, supported by the whole force of public opinion, not only in this country but throughout the world, must go forward together confidently in order to attain the object which I have attempted to outline in this lecture, and, when success crowns our combined efforts, as I believe it must, we shall have conferred upon posterity a benefit which will for ever count as a credit to our own generation.

DISCUSSION

AIR COMMODORE H. LE M. BROCK : The Lecturer has left me completely in the dark as to what is the legitimate objective of air bombardment. He has said that a warship takes its zone of operations with it. Does an aeroplane take its zone of operations with it ? Is an aeroplane at its aerodrome in the zone of operations ? We certainly thought so in the war of 1914-18. The aerodromes were then, of course, in what was considered the theatre of operations, but imagine a concrete case now similar to that of 1914, with German aeroplanes bombarding the French army and its communications. They could come from hundreds of miles away, from the depth of their own country. Would their aerodromes around Berlin, for example, be legitimate objectives to bomb ? Further, if it is conceded, as I think it must be, that all military aerodromes are legitimate objectives, are the repair depots behind them legitimate objectives ? Further, are the depots containing all the reserve aircraft and engines still further behind, or wherever they may be, legitimate objectives ? Does it depend on whether these establishments are manned by individuals in uniform or in civilian clothing ? I gathered from the Lecturer that the distinguishing factor between a non-combatant and a combatant was that the combatant wears uniform. Supposing all the ground personnel of an air force, who do not go into the theatre of operations, were put into mufti, would they cease to be combatants ? It is quite conceivable that the repair depots might be manned by civilians. Aircraft that have been employed in bombardment may come back damaged and be sent to these repair depots and be repaired there by civilians. Would those depots then be legitimate targets for air bombardment or not ?

My question is this : What is the distinguishing factor between a legitimate objective for air bombardment and an objective that is not according to international law ?

THE LECTURER

I am assuming that reconnaissance and attack on the front-line troops are the only purposes for which aircraft can lawfully be used, and I have not considered the question of retaliatory bombing of a distant aerodrome which has sent aeroplanes on bombing expeditions far afield. If it can be shown that aircraft could certainly aim accurately at these aerodromes, then I think it might be legitimate to bombard them, but what I put forward in the lecture was that, at any rate as matters are now, it is utterly impossible to be certain of hitting any target, and, if there was a single cottage near the aerodrome where one of the workers at the aerodrome was living and his wife might be killed, then in my submission the bombardment would be illegal. I do not say it will not be carried out, but I am considering the legal position.

With regard to repair depots, the fact that a civilian is repairing an aeroplane does not seem to me to put him in a different position from a person making an aeroplane.

I am trying to state what the law is, and I know that my answer must sound unsatisfactory to the Service, but it is the best that I can give.

The customary votes of thanks to the Lecturer and the Chairman were carried by acclamation.

SPANISH PATROL**SOME PERSONAL EXPERIENCES**

By "WALRUS"

THE Spanish Civil War has now been in progress nearly two years, and a plethora of literature on the subject is already available. Although generally biased by the political opinions of the writers, many of these books and newspaper articles include accounts of the fighting on land, and personal experiences in Government and Nationalist Spain. Reliable accounts of the naval side of the war are, however, limited, although a comprehensive one was published in the February issue of this JOURNAL.¹

Throughout the war the British Navy has been continuously employed in Spanish waters transporting refugees and protecting shipping. The magnitude of this task has to some extent received recognition in the Press, and gratitude for the Navy's humanitarian work has been expressed in various "Letters to the Editor"; but very few first-hand accounts of this work are available. The present author has therefore endeavoured to compile from memory an account of his own experience in Spanish waters. This article covers service in H.M.S. "Queen Elizabeth" from July, 1936, to January, 1937: it makes no attempt to include the operations of every unit of the Mediterranean Fleet during that period; nor is it concerned with the political aspects of the conflict, its international reactions or the actual progress of the fighting on land and sea, since these are all matters for the historian.

ALEXANDRIA

H.M.S. "Queen Elizabeth" arrived at Alexandria in June, 1936, and rejoined the Mediterranean Fleet from which she had been absent since March. During her absence recommissioning in England the flag of the Commander-in-Chief had been flying in H.M.S. "Barham," but early in July the Admiral and his staff returned to the "Queen Elizabeth."

The Mediterranean Fleet, reinforced by cruisers, destroyers and light craft from the China, North America and West Indies and

¹ "The Influence of Sea Power on the Fighting in Spain" by Vice-Admiral C. V. Usborne, C.B., C.M.G.

Australian stations, as well as from England, had been based at Alexandria since September, 1935, owing to the exigencies of the international situation which had arisen out of the Italo-Abyssinian War. For some ten months the usual annual programme—cruises to the South of France, the Adriatic and the Greek Islands interspersed with liberal periods at Malta—had been entirely in abeyance. The fleet had been concentrated in the Eastern Mediterranean, where the ships had steadily prepared for a day which, mercifully, never came. Leave and facilities for recreation at Alexandria were necessarily restricted. The only opportunities for change were a hurried forty-eight hours docking at Malta, a turn of duty as guard ship at Port Said, Ismailia or Suez, or a few weeks with the detached forces stationed at Haifa.

With the end of the Italo-Abyssinian War and the lifting of "sanctions" in July, 1936, the situation cleared; emergency precautions in the Mediterranean were no longer required. There was just time to hold the annual pulling regatta before the fleet dispersed. Coinciding with the regatta and its inevitable celebrations came word from the Admiralty that the Mediterranean Fleet could revert to normal. There had already been some reduction in its strength during past weeks with the return of the First Minesweeping Flotilla to Portland and the dispersion of the Nineteenth Destroyer Flotilla. Then H.M.A.S.s "Australia" and "Sydney" left, amidst the cheers of the fleet, for Australia; the "Berwick" and "Adventure" followed them through the Suez Canal *en route* for China; the "Exeter" sailed for England to recommission, and the "Ajax" followed to dock at Malta before returning to South America. Various ships normally attached to the Mediterranean Fleet, including the First and Fourth Destroyer Flotillas, were long overdue for recommissioning and left for England. And thus there came a Saturday towards the end of July when a somewhat depleted fleet at last left Alexandria.

We sailed after breakfast with the green and white Royal Standard of Egypt at the main. The young King came out for the day to watch various exercises, including a full-calibre firing by the First Cruiser Squadron and torpedo attacks by the destroyers. During the afternoon the fleet formed up in two long lines, and as the "Queen Elizabeth" passed down between them, the ships were manned and gave three cheers for His Majesty. The Fleet Flagship and the "Repulse" returned to Alexandria, while the Vice-Admiral Commanding First Cruiser Squadron took the remaining ships under his orders and set course for Malta. The "Repulse" returned to Alexandria in order to act as Senior Naval Officer while the defences of the harbour were dismantled. The "Queen Elizabeth" returned to disembark the King, and then sailed for Malta in the wake of the rest of the fleet.

REVOLUTION IN SPAIN

On the following Sunday we took stock of the situation : there seemed no reason why, after a few weeks rest at Malta, we should not resume the normal annual programme with the usual second summer cruise. No plans had yet been made, since the departure from Alexandria had been so sudden, but we looked forward to the possibility of two months in Greek waters with some shooting. The "Queen Elizabeth" overtook the rest of the fleet on Monday morning, and the day was filled with the usual inclination exercises and manœuvres to which ships on passage are accustomed. The blow fell that evening during a night encounter exercise, when a series of "Immediate" signals were received by wireless from various sources. The Consul at Vigo reported riots and asked for a warship to protect British lives and property. Similar requests came from Cadiz and Barcelona. Within an hour, sufficient information was available to show that a serious revolution had broken out in Spain.

Other signals followed in rapid succession indicating that action to provide assistance was already being taken. The Fourth Destroyer Flotilla, at Gibraltar on its way home, had been despatched to Cadiz, Tangier, Malaga and other ports on the South coast of Spain. Captain (D), First Destroyer Flotilla, at sea off Corunna, reported that he was proceeding to Vigo. Two destroyers of this flotilla, which had just arrived at Devonport, were hastily ordered out to the North coast of Spain—a rude if inevitable shock to officers and men who had just returned from three years' service abroad. And, by half-past ten, the Vice-Admiral Commanding First Cruiser Squadron had been ordered to proceed with the "London" and "Devonshire" to Barcelona with despatch.

The "Queen Elizabeth" and the remainder of the fleet reached Malta on 21st July, and the Commander-in-Chief and his staff transferred ashore to the Castille—their usual headquarters at Malta. The extent to which the conflagration in Spain would develop was not yet clear, but the ships in Spain were soon fully occupied transporting refugees, and calls for additional ships came in. These were by no means easy to meet, for the Third Cruiser Squadron and the Twentieth Destroyer Flotilla were still at Haifa owing to the disorders in Palestine. Almost every available cruiser, depot ship and destroyer was despatched to Spain in order to provide collecting ships for refugees at each port, and a ferry service for their transportation to Gibraltar and Marseilles.

A week after our return to Malta a serious situation developed at the Internationally controlled port of Tangier : General Franco threatened to occupy the territory if Spanish Government warships did

not cease to use it as a base. In the circumstances the Commander-in-Chief wished to be nearer the scene of a possible incident ; but his flagship was in the floating dock and not immediately available. An orderly "panic" followed : the "Galatea" was ordered to raise steam for full speed, and early on 30th July sailed with the Admiral and half the staff, thus stretching to the limit the accommodation of a cruiser which already carried the Rear-Admiral, Destroyers, and his staff. The "Queen Elizabeth" was undocked early on the 31st : fuelling, storing and ammunitioning took place simultaneously with the embarkation of the remainder of the staff and all the contents of the Admiral's office, which had been disembarked but ten days earlier. At 5 p.m., thirty-six hours after the "Galatea" had sailed, the "Queen Elizabeth" followed at eighteen knots for Gibraltar.

GIBRALTAR

Steaming at thirty knots the "Galatea" reached Gibraltar in thirty-six hours, and the Commander-in-Chief's flag was transferred to the "Ajax." Poor old "Ajax": she had commissioned nearly eighteen months before for service in South America ; she had just reached her station when she was recalled to Gibraltar, subsequently serving for a year in the Eastern Mediterranean ; and now it seemed that, just as she was on the way back to South America, she was to be detained for service in Spanish waters. This detention was, however, only temporary and possibly had its compensations, for on the Monday the "Jaime I" and "Libertad" steamed into Gibraltar Bay and for an hour bombarded Algeciras at close range ; the "Ajax," alongside the South Mole, was an excellent grand-stand.

The "Queen Elizabeth" arrived early on 3rd August ; the flag was at once transferred and the "Ajax" allowed to sail. The situation at Tangier now cleared, the International Commission of Control having succeeded in persuading Spanish Government warships to leave the harbour. Early on 4th August, therefore, we sailed for Barcelona at eighteen knots. Off Alicante and Valencia we met the destroyers which brought out the S.N.O. and the British Consul to confer with the Admiral. In addition, at the latter port, we were presented with a dozen refugees of various nationalities—I recall Swiss, German, French and English—for passage to Barcelona. One could sympathize with these poor people who had lost practically all they possessed. We cleared a number of cabins in order to provide them with accommodation and made them at home in the wardroom. We gave them deck chairs in the sun on the quarter-deck and ransacked the ship for mascots which would serve as toys for the children. I think we at least made

them feel at home in their unaccustomed surroundings for the short time they were with us. Each refugee had only brought away one suitcase, except in the case of a German family who had, in addition, brought a basket containing four beautiful fantail pigeons. These they insisted on presenting to the Captain when they left. I never heard exactly what the recipient thought of the gift, but I know that they were subsequently added to the small menagerie kept by the ship's company's conjuror—to be suitably produced from the hat at concerts. The whole party was almost pathetically grateful when they were transferred to a destroyer for passage to Marseilles—but then, after you have been living in the middle of a rather bloody foreign revolution for three weeks, a British warship probably seems the safest place in the world.

We arrived at Barcelona on 6th August, remaining for only twenty-four hours. The anchorage was full of warships—British, German, Italian and French—as well as a number of foreign merchant ships, which were all employed in evacuating refugees. The "London" was still here, and was the only ship actually inside the harbour and secured alongside. She was acting as a central clearing station for our refugees, from which destroyers were running ferry trips to Marseilles at least three times a week. I remember being very impressed by a German destroyer: she was only a small vessel of 800 tons but, as we arrived, her entire ship's company were fallen in on the upper deck in spotless white uniforms. Ceremonial over, they cleaned into nothing more than a pair of shorts for the day's work. Later, when the Admiral went inshore in his green barge, our Yeoman of the Watch was politely asked by semaphore in excellent English the meaning of the red affirmative disc displayed in the bows. On this and other occasions we gained very favourable impressions of the efficiency of the German ships and of the physique of their men. We did not have time to meet them, but to our ships which did they were very friendly. They carried beer for their ship's companies, even in their destroyers, and were very ready to share it with our ships when lying together in Spanish ports at which no leave was possible.

An uneventful passage back to Gibraltar, again at eighteen knots, followed. These and subsequent trips, if uneventful, were never without interest. We frequently met foreign warships of different types, though the sight of Spanish Government ships always aroused the greatest interest, since there was always the possibility of an encounter with Nationalist ships or aircraft. We usually met the "Jaime I" and the "Libertad" between Malaga and Gibraltar, either proceeding to, or returning from, a bombardment of Nationalist territory on one side of the Straits.

We remained at Gibraltar from 8th to 21st August in company with the "Galatea." The Spanish Government fleet was at this time in command of the Straits, where they maintained a continuous patrol with at least two flotilla leaders, with the object of stopping the passage of Nationalist troops from Morocco to Spain. There was some interference with British shipping, which we at first countered with a destroyer patrol. The British and Spanish leaders and destroyers were very similar in silhouette, with the result that on more than one occasion our destroyers were mistaken for Spanish ships and bombed by aircraft. To avoid such incidents, it was decided to employ large ships for the patrol. The "Queen Elizabeth" and "Galatea" were the only two immediately available. Thus, during the ensuing fortnight, we shared with the "Galatea" a daylight patrol of the Straits. One ship, with 6-in. and anti-aircraft guns manned and ready for action, steamed at eight knots up and down the Straits, closing both shores and the Spanish patrolling vessels, in order to ensure that both parties to the conflict knew that we meant business. At night one ship remained anchored in the Bay with searchlights burning, in order to ensure that no attempt was made to land troops on British territory. A destroyer or trawler carried out a similar duty on the Eastern side of the Rock.

This period at Gibraltar, in spite of the patrol, was a comparative rest for officers and men. Gibraltar was cool after the summer heat of Alexandria and Malta, and, though leave was necessarily restricted to Gibraltar itself, we obtained plenty of exercise climbing the Rock or playing cricket against local teams. And if these amusements palled, there was always the possibility of Algeciras being bombed or bombarded; and this happened several times during our stay. Either an aeroplane came over and dropped two or three bombs, or one of the patrolling flotilla leaders would close the port and fire half-a-dozen salvos. The damage was always negligible, and the object of these tactics never seemed to us to be much more than sheer *joie de vivre* on the part of the crew of the ship or aeroplane concerned.

One evening the American battleship "Wyoming" arrived without warning. She had been over in northern European waters as part of the Annapolis training squadron when she had suddenly received orders to transfer her cadets to the remainder of the squadron and to proceed to Gibraltar. As a result her officers had no white uniform available—and blues were far from comfortable in the prevailing temperature—nor had they sufficient charts. We lent them one of Cadiz since they wished to proceed there at once and, on their return forty-eight hours later, we arranged a supply from the local chart depot.

THE "GIBEL ZERJON" INCIDENT

Spanish activity in the vicinity of Gibraltar and, more especially, the need for maintaining a strong military patrol at the frontier in order to control the influx of refugees, lead to a call for additional troops. The garrison had been reduced to one battalion during the Italo-Abyssinian emergency. H.M.S. "Repulse" had therefore transported a battalion from Alexandria at twenty-five knots. This ship had then been despatched to Palma, from whence she had evacuated five hundred refugees in one voyage to Marseilles. She was now available to relieve the "Queen Elizabeth" on the Straits patrol, and thus, on 21st August, we sailed for Malta.

Shortly after lunch on Sunday, 23rd August—these things always seem to happen on Sunday—we received a distress message. The small British merchant ship, "Gibel Zerjon," had been intercepted whilst on passage from Gibraltar to Melilla and was being escorted by the Government cruiser "Miguel de Cerventes" to Malaga or Cartagena. We were much too far to the East to afford immediate assistance, but we altered course a hundred and eighty degrees and increased speed—a rude shock to those of us who were looking forward to meeting our wives at Malta next day! We were acting as a target to exercise flying-boats from Malta at the time, and we intercepted almost pathetic messages from these craft to their base showing that they considered our tactics most unfair! The "Repulse" and "Codrington" were at once ordered out from Gibraltar, and the "Wolsey" from Malaga. Many of the ship's companies of the "Repulse" and "Codrington" were ashore when the wirelessed order was received, but military patrols were successful in rounding up the men. *Within two hours* the "Repulse" had raised steam, had cleared the harbour, and was steaming at thirty knots for the scene of the incident. The British ships reached the "Gibel Zerjon" together. While the "Repulse" lay off, her 15-in. guns being quite sufficient to deter any warship from rash activity, the Captain of the "Codrington" boarded the "Miguel de Cervantes" and secured the release of the British ship. On receiving the news in the flagship at about 7 p.m., that the "Gibel Zerjon" was now being safely escorted back to Gibraltar, we altered course for Malta, where we arrived, only a few hours late, on 24th.

SPAIN AGAIN

We stayed in the Grand Harbour until 10th September, the Admiral and staff remaining on board, discouraged by recent experience from making any attempt to transfer the office ashore. Then the Commander-in-Chief decided to make another personal visit to the war area, and we

proceeded to Palma, arriving early on 12th September. Majorca was now under more or less peaceful Nationalist rule and it was possible to grant leave until sunset. We were able to attend a bull-fight and were apparently the only people in the town not in uniform or armed with weapons of some sort, children included ! We exchanged calls with the wardroom of an Italian and a French cruiser and entertained the officers to our " talkies " in the evening.

Early next morning we embarked our second load of refugees and sailed for Barcelona. I remember giving up my cabin to a Cuban lady for the night. This party, which numbered less than a dozen, included three young ladies who were soon monopolized by the gunroom where they dined and, next morning, also breakfasted. We transferred this party to the " Shropshire," now collecting ship at Barcelona, on our arrival, and, after a few hours, during which the Commander-in-Chief conferred with the Rear-Admiral Commanding First Battle Squadron, who was in charge of the area, and the Consul-General, we sailed again. We stopped for a similar period and conference off Valencia before anchoring for twenty-four hours off Malaga. There were frequent air-raid alarms, and during the night we moved further from the town and displayed floodlit white ensigns on our turret tops. When we finally sailed, the " Libertad " wished us *bon voyage* by signal !

After a few hours' call at Gibraltar on 17th September we turned eastwards for Malta, only to awake on 18th to find ourselves anchored off Malaga again. The approach of the Nationalist forces and the fall of the town appeared imminent and the Consul had summoned assistance. During the day warships of other Powers arrived, and before nightfall we were able to sail on relief by a cruiser from Gibraltar.

INTERLUDE

The " Queen Elizabeth " reached Malta on 21st September, but nine days later we were off again. In so far as British interests were concerned, the Spanish situation was well in hand and the Commander-in-Chief decided to pay a visit to Greece. We called for a few hours at Port Trebuki in order to pay a visit to Rupert Brooke's grave. I wish I could subscribe to the rhapsodically beautiful accounts which one reads about this tomb ; but I found nothing very remarkable save, perhaps, the utter desolation of its site in a very small olive grove. The grave was well preserved and was clearly being maintained in proper order by the Greek authorities.

After ten days rest at Mudros—and rest implies the feverish activity involved by shooting, paper chases, training for the Arbuthnot trophy

race, sailing picnics and so on—we proceeded to Phaleron Bay for a six days visit, in company with "Glorious" and "Repulse," to the Greek capital. On the Saturday we were honoured to receive a visit from His Majesty the King of Greece, who inspected the ship's company. When we sailed, His Majesty proceeded to sea in the "Glorious" with a number of Greek officers to watch flying operations. After a six days visit to Suda Bay, in Crete, we returned to Malta.

We remained at Malta for the next two months, the Admiral and his staff transferring ashore to the Castille. We frequently envisaged the possibility of another "emergency" transfer afloat as little incidents involving British interests were reported, but we were lucky. Additional ships had joined us from England after recommissioning, and it had been possible to make considerable reductions in the Haifa force. Sufficient ships were therefore available to provide all the vessels required in Spanish waters, including the necessary reliefs so that ships could obtain rest and leave at intervals. In November we were able to welcome the Turkish Fleet, headed by the old "Goeben," now the "Yavuz Sultan Selim," on her first visit to Malta since the Great War. This event was in every way a great success.

We were lucky enough to spend Christmas in Malta. Five months earlier we had imagined that we were returning to normal; yet this was the second Christmas in succession with a large proportion of the Mediterranean Fleet away from Malta on duty—and there has since been another.

FAREWELL TO SPAIN

We sailed again on 6th January for Gibraltar, exercising on passage with the cruisers and destroyers which were proceeding to relieve their less fortunate sisters who had spent Christmas in Spanish ports. After a brief stay at Gibraltar, while the Commander-in-Chief and Rear-Admiral, Gibraltar, reviewed the Spanish situation and discussed future measures for guarding British interests, we sailed for Malta on 12th January.

Shortly after our return to Malta, I was relieved in the "Queen Elizabeth" and ordered home. I was sorry to go, for there was always something exciting about the naval side of this Spanish business. One saw nothing of the trouble ashore, and therefore nothing of the horrors. But there was always the possibility of watching an action between Government and Nationalist warships. Signals reporting the rival forces would be received and plotted, and interest would run high if their positions and courses indicated the chance of an engagement. Unfortunately we all missed the action on 29th September, when the

"Almirante Cervera" and "Canarias" sank the "Almirante Fernandiz" in the Straits and put the "Gravina," badly damaged, to flight.

The transport, in which I sailed for England, approached Gibraltar early on a Sunday morning. The Home Fleet had arrived from England for its annual Spring cruise and had relieved the Mediterranean Fleet in its duties in Spanish waters. At daylight the cruiser "Neptune" hove in sight and escorted us through the Straits. That was the last I saw of the Spanish patrol.

AN INTERNATIONAL AIR FORCE THE BASIC DIFFICULTY

By J. M. SPAIGHT, C.B., C.B.E., LL.D.

SIX years ago the writer of this article wrote a book on *An International Air Force*. It was exceedingly unsuccessful. That was hardly surprising : it was exceedingly dull, and in any case no one took any interest in the subject then. Now, a group of young men at Oxford have actually begun to form their own international air force ; they should read the book. It would do them a lot of good ! The object of the present article is not to try to resurrect that book ; that would be impossible. It is to draw attention to an aspect of the question which could only be discreetly hinted at by one who was still a Government servant : that is the political aspect. To deal with it involves discussing the characteristics of different kinds of government, the pull of forces within a single government, the influences operating upon governments of various political complexions.

Unquestionably the basic difficulty is the political one. There is no insuperable difficulty in the way of organizing an international force of the contingent type ; and operationally there need clearly be none. Recent events in Spain have proved the practicability of an international air force assembled *ad hoc*. Indeed, they have proved rather too much. They have proved that two such forces are possible in the same war. We have seen Spanish, Italian and German pilots and machines fighting on one side ; and Spanish, Russian and French on the other. There is an ultimate moral in that fact, but it will not be drawn here. The immediate lesson is that national air contingents can readily be assembled for international action at need. There should be no difficulty whatever in arranging similarly to assemble them on a future occasion. The machinery of an international air force can easily be created. The point is—who is to set its several parts in motion ?

By an international air force is here meant a force made up of contingents drawn from a number of States who have entered into an agreement to furnish such contingents for combined action in specified circumstances. This, the contingent kind, is the only kind of international air force which is worth serious consideration. The alternative kind, a standing force permanently located in internationalized territory, e.g., in Tunis, as is suggested by Air-Commodore Charlton in "The

"Menace of the Clouds," or in a number of internationalized territories as is suggested by Lord Davies and the New Commonwealth Group, and maintained in peace in readiness for action, is at present utterly impracticable. There is not the least likelihood of a sufficient number of Powers ever agreeing to establish a force of the kind. If one were established, it would be a grave danger to all free peoples—a modern and more menacing incarnation of the historical Janissaries, Mamelukes or Knights of Malta. The only kind of international air force which is worth discussing as a practicable proposition is one composed of squadrons raised, armed, trained and maintained by the individual States who have agreed to contribute their national quotas to a force intended for combined operations when the need arises. The squadrons so maintained might or might not be ear-marked in peace for international employment in war. What is essential is that the States concerned should have undertaken to supply the contingents for the international force in certain emergencies. It would be, so to speak, only a potential force in peace; it would become an actuality in war (if that is the emergency contemplated in its charter). The agreement would cover also the provision of all the ancillary services. Arrangements for the use of aerodromes, landing grounds, seaplane bases, would similarly have been made beforehand. It would be a kind of "shadow" force, to come into being and activity when the need arose.

Whatever the functions and powers of the international authority (e.g., the Council of the League of Nations) in regard to the declaration of an emergency necessitating the employment of the force, it would still be necessary for the States themselves to mobilize and dispatch their contingents. If the international authority had the right to call up the contingents without the intervention of the national governments, then the commanders of the various contingents, and probably the rest of the personnel, would have to be denationalized and to swear allegiance to that authority. Such a system is even less likely to command general acceptance than the project for a separate, standing international force. So long as the States retain their Sovereignty, and until, if ever, a federal government of Europe—or the world—is established, there is no alternative; if the proposal is to have any hope of general adoption, to leave with the States the control in peace of the quotas which they agree to contribute; and such control carries with it necessarily the right to mobilize those quotas when the contemplated emergency arises.

Now, in a democratic State, where the divine right of the fifty-one per cent. is recognized, it may happen that, whatever the undertakings which the government has given, the dispatch of the contingents of the international force may prove to be impracticable in certain conceivable

circumstances. Popular opinion may be overwhelmingly on the side of the State against which the international force is to be launched. A wave of emotion may sweep the country whose contingent is summoned. Parliament and the Press may raise vigorous opposition to the dispatch of the national quota on a service which the national conscience disapproves. The feeling of the nation may be unmistakable, the consequences of flouting it too grave to be ignored. Even the strongest and most determined government may find it impossible to withstand the universal demand that the contingent be kept at home. It is true that in every democratic State the Government has ways and means of keeping both Parliament and the Press reasonably docile and subdued : the bad old days of cash bribery have gone, but it is still possible by a variety of other methods to make both legislators and newspaper proprietors understand that their best policy is not to be too independent. Carefully conveyed hints of honours or appointments which may be the reward of good behaviour, veiled threats of the withdrawal of official support at the next election in the event of intransigence, tactful indications of the benefits which may be the result if a certain course is followed and the disadvantages likely to ensue upon the adoption of an embarrassing line : these are but a few of the devices which modern technique has substituted for the cruder methods of Sir Robert Walpole and his contemporaries. Nevertheless, there may come a time when the current of public opinion is so powerful that all the normal means of stemming or diverting it are swept away. After all, the elected legislator cannot entirely disregard the opinions of his constituents ; and even the Press magnate must sometimes bow to a storm of popular opinion.

Another possibility has also to be considered : the Government itself, without any pressure from outside, may hesitate to comply with the international authority's requisition. That hesitation will not be due to any desire upon the Government's part to evade its obligations. There will be no question of a refusal or failure to obey a command. Command, indeed, in the true sense, there will be none. There cannot be, when the matter is one of contract. The Government will have contracted to furnish a contingent if so and so happens. It has the right to decide whether the "so and so" which has actually happened is the "so and so" contemplated in the contract. It may not be ; it may be a quite different "so and so." If it is, the Government is not bound under the contract in that particular case. Here is a loophole, but it is a loophole which cannot be closed until European or World federation comes. Until it does, governments will not surrender the right to decide whether the circumstances in which they promised to take action have in fact arisen. No State which is fully sovereign can part with that right ; if it did, it would *pro tanto* cease to be a sovereign State.

Now, the degree of alacrity or hesitation with which a government will act upon the international authority's requisition will depend not only upon the circumstances of the particular emergency, but also upon the political complexion of the government which happens to be in power. It may be a government of any one of the following three kinds :—

- (1) A government of the Right, not inclined to take action in any case in which the country's own defence interests are not immediately concerned.
- (2) A government of the Left, readier, perhaps, to take such action when the motive is an altruistic than when it is a selfish one.
- (3) A government of the Centre, in which views approaching those of each of the above kinds of Government, but not going the whole way with either, will find expression.

It is safe to say that a government of the first of these three categories would probably not be prepared to dispatch its quota of an international air force in all the circumstances in which a government of the second category probably would. The latter could be depended upon to come to the aid of a victim of aggression anywhere, the world over, from China to Peru ; whereas the former would look more closely to the effect of rendering such assistance upon its national defence interests. What a government of the Centre would do—and governments of the Centre tend in these days to be the commonest form of government, for reasons of domestic politics—would depend on the result of a pull of forces within the government itself. The result would probably be, after a good deal of hesitation and perhaps a certain amount of bluff, the adoption of a course which the Right would criticise as going dangerously far, and the Left as a betrayal of the whole principle of collective security.

Why should there be this tendency to hedge, this half-heartedness, upon the part of a government of the Centre when it comes to the final plunge ? Why should not the pull of forces carry it to the natural consequence of its initial steps ? The reason is to a great extent psychological and is worth analysing. A government, whether of the Centre or not, speaks with one voice—except in moments of aberration or indiscretion—and acts as a unity. But behind the singleness of speech and action there lies often a conflict, the issue of which had not been certain. One may picture, indeed, the composite directing brain of a democratic government as a centre or nucleus upon which impulses of various kinds act, pulling it this way and that and determining the course of history by the preponderance of the final pull. There is nothing mechanical, nothing in the least automatic, about the process.

It is a process in which personalities, mentalities, perhaps prejudices, human qualities and defects shape the issue ; and the issue may be, in the end, the outcome of sheer weariness after interminable debate. The decision which turns the tide of history is often a matter of a very small preponderance of opinion, of a slight tipping of the balance to one side or the other, of an almost negligible margin of preference for the course actually taken. Great events rest on the knees not of the gods, but of fallible and usually overstrained men, whose minds, taken in the bulk, are likely in a government of the Centre to be flexible and not all set in one mould. The decisions of such a government represent the sum of the reactions to a number of different stimuli. What are these ?

First, there is the impulse to intervene even if one's own material interests are not at stake, to " do one's bit " by collective security, to " swat " that noxious insect—aggression, wherever it settles : a generous impulse this, if rather fussy and officious at times—the *Swat-the-War* impulse one might label it, meaning any other people's war.

On the other side is the impulse *not* to intervene, not to risk our own young men's lives in a quarrel in which our defence interests are not threatened, not to try to become a brother's keeper for the whole wide world—the *Mind-our-own Business* impulse, one might call it ; selfish at first sight, but selfish for not unworthy reasons.

Closely allied, but less inflexibly opposed to intervention, is the impulse to see that our own defences are in proper shape—which they rarely are—before we indulge in knight-errantry abroad—the *Look-to-your-Moat* impulse, it might be termed : an impulse wise in its generation and sincerely patriotic, but condemned as shortsighted, equally with the last, by those who hold that peace is one and indivisible, that the disturber of it is the enemy of all nations alike and that our defence interests are best served by joining in suppressing him without waiting to consider our immediate risk.

The *Save-the-Money* impulse is naturally on the side of caution, for crusading in the cause of peace means spending, and no nation's exchequer is inexhaustible. So, too, is that impulse of which Tennyson spoke so contemptuously in his *Maud*—the *Huckster* impulse, one might call it, remembering his scathing " This huckster put down war ! "

Then there is the sometimes embarrassing impulse to honour literally pledges which may have been given to the electorate—the *What-did-we-say-at-the-last-Election* impulse would do as its title. It is an annoying impulse, pulling both ways. It keeps whispering, perhaps, that promises were made to support collective security strongly and at the same time not to embark on any big rearmament programme ; which two things,

if armaments were inadequate when the promises were given, are hardly compatible one with another.

These are but a few of the many forces which make for or against intervention in a foreign dispute. There are others less worthy, less public-spirited, more self-seeking. Such motives must play their part, even if subconsciously, in any human deliberations; but it is justifiable to assume that in a grand council of a nation, it will be a minor part. The main influences will be those described above. One can imagine, then, all these different impulses acting on the (so to speak) central ganglionic mass of the directing brain, which, just because it is the centre of a government of the Centre, is likely to be unimpassioned, cautious, not disposed to "go the whole hog." The almost inevitable result is to induce a frame of mind which is prepared to go a certain distance but no further, to adventure up to a point and then to think again. Democratic governments are a little inclined to shiver on the brink when it comes to the final plunge. A dictatorial government is readier to "damn the consequences"; it is apt to be more resolute, more ruthless. A popular government, unless it receives some particularly unsettling jolt, prefers to let life go in a nice, easy jog-trot. Jog-trotting is no sort of use to the reformers who want an international air force to be continually riding the ranges of the world. A totalitarian government would be, it seems, more to the reformer's liking in this respect, for such a government is essentially volatile and adventurous. Yet when one considers the matter more fully, one finds that even under an authoritarian government, there is no certainty that the promised quota of an international air force will be forthcoming. In the authoritarian State, the government is at least strong and decided. Public opinion is effectively under control. Neutrality within the State is non-existent. The conception of "His Majesty's Opposition" is utterly impossible. A firm and single front is presented by the nation to the world. Action in the international sphere can be prompt and vigorous. Yet the State is not the completely free agent which it might at first sight be thought to be. It rests on force. It can never forget that fact. Because of it, the government may, indeed, be disposed to adventures abroad which will divert attention from repressive conditions at home. Because of it also, however, the State's freedom of action is circumscribed in one important respect: it cannot afford to take sides against another totalitarian State; it must keep the faith of the brotherhood; the dictator will always be disinclined to join in sanctions against a fellow dictator.

The ideological motive will be a factor too, no doubt, in a democratic State's decision. A government of the Left may not be over-enthusiastic about taking coercive measures against another government of the Left

or against a State in which a " Dictatorship of the People " is in power. A government of the Right may have its corresponding prejudices and preferences. They will not be as strong and decisive, however, as in a totalitarian State. Such a State will be able to disregard considerations with which a popularly elected government must reckon.

The decision to mobilize the quotas of an international air force would rest with governments of the widely varying characters referred to above. A not unfair parallel would be a fantastic situation in which the mobilization of the Royal Air Force had to be approved by half a dozen British Cabinets, all in power simultaneously. Whether, under such a system, the squadrons' war stations would ever see them must be doubtful in the extreme.

In the world as it is, and it is folly to postulate a non-existent world, there is no certainty that the contingents of an international air force would infallibly be forthcoming when needed ; and no kind of international air force other than the contingent is within the bounds of practicability. An international air force which failed to form in the moment of danger would be useless ; nay, it would be worse than useless, for it would create an illusion of security. The world has not yet reached a stage in the progress towards internationalization at which an experiment of the kind would have a fair chance of succeeding. That situation will not be eternal. Perhaps in the course of time the prospect for such a force will be more hopeful ; but that time is not yet.

THE INFANTRY SECTION—FRENCH, GERMAN, AND BRITISH

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"PRACTICALLY all success in war, which is won by the proper co-operation of all arms, must in the end be confirmed by infantry, which, by closing with the enemy, compels his withdrawal or surrender."¹ This view of the role of infantry in the attack is shared by the French and the Germans. "Infantry," say the former, "is charged with the principal mission in battle,"² while the German regulations lay down that "the object of all arms co-operating in an attack is to enable the infantry to reach the enemy with adequate fire- and assault-power, so that it can penetrate his defences and finally break down his resistance."³ But "the basis of infantry organization is . . . the section, which is the largest group of men that can be controlled personally by its leader throughout the battle"⁴: it follows therefore that the necessity for a sound doctrine of section tactics can hardly be over-estimated. The year 1937 witnessed several notable changes in our infantry organization, but none, perhaps, calculated to have more important results on our infantry tactics than the reorganization of the rifle platoon into three homogeneous sections. The time seems opportune, therefore, for an examination of the tactics of the homogeneous section in foreign armies which have based their infantry organization upon it for some years past. In this article, accordingly, the organization and handling of the French and German sections are described, with the object of seeing whether any conclusions can be drawn which might usefully be applied to our own reorganized section. The scope of the discussion is limited to the section in the attack, since this presents more difficult problems than does the disposition of platoons and sections in defence.

¹ F.S.R., Vol. II, 1935, Sect. 4 (1).

² *Instruction sur l'emploi Tactique des Grandes Unités*, 1936, p. 42.

³ *Truppenführung*, 1933, para. 329.

⁴ *Infantry Training*, 1937, Sect. 1 (2).

THE FRENCH INFANTRY SECTION¹

The French infantry section or *Groupe* is composed of :—

1 <i>Serjeant</i>	Section commander.
1 <i>Caporal</i>	Second-in-command.
1 <i>Tireur</i>	No. 1 of the light automatic.
1 <i>Chargeur</i>	No. 2 of the light automatic.
3 <i>Pourvoyeurs</i>	Ammunition carriers.
1 <i>Premier voltigeur</i>	Leading rifleman.
3 <i>Voltigeurs</i>	Riflemen.
1 <i>Grenadier V.B.</i>	Rifle grenadier.

Total : One commander and eleven other ranks.

The *tireur* and *chargeur* are armed with pistols, the *pourvoyeurs* with carbines, and the remainder with rifles.

"The section . . . comprises an automatic weapon to which are attached men who serve it, feed it, protect it and exploit the results of its fire." It is never to be split up except for purposes of concealment and to minimize casualties.

FORMATIONS

The French lay down a limited number of formations for the section—as also for the platoon and company—with definite rules for their employment, instead of enunciating general principles and leaving section commanders to interpret and apply them in each particular case. The main reason for this is that on mobilization most sections will be commanded by N.C.Os from the Reserve. The prescribed formations for the section are :—

Single File.—This is regarded as the normal formation. The section commander is about six paces in front of the second-in-command and the numbers one and two of the light automatic, the ammunition carriers are about ten paces in rear of the latter, and the riflemen are twenty paces further back still.

Half-Sections.—This formation is adopted "when the fire of the light automatic may be needed, i.e. in principle at distances of 1,200 yards and under from the enemy." The section splits into two halves, the serjeant and corporal going with the light automatic and its attendants, whilst the *premier voltigeur* takes charge of the remainder (including the rifle-grenadier). The rifle half-section normally moves behind

¹ See *Règlement de l'Infanterie*, 1928, from which all quotations in this part are taken except where otherwise stated.

the light automatic, but may move on one flank or the other, and, when the section is on patrol or acting as point of an advanced guard, moves in front.

In this formation—except, it would seem, when the riflemen are leading—the section can rapidly take up a position *en batterie*: that is to say, the light automatic comes into action supported by the *pourvoyeurs*, whilst the riflemen take cover where they have halted.

Line.—The section extends into line—

- (a) to make use of a piece of cover parallel to the front.
- (b) to enable the riflemen to fire, in addition to the light automatic, at distances of 400 yards and under from the enemy. When halted the section is then *en batterie*.
- (c) for the assault.

The frontage and depth of the section are not to exceed 50 yards in any formation. In file, the normal distance between men is one pace, in line the normal interval is two to five paces.

TACTICS

Until 1928, the French section was organized into two *équipes*, or squads, one a light automatic, the other a rifle squad. The tactics prescribed for it were open to the criticism that the rifle squad was tied so closely to the light automatic that the section lacked manœuvring power, whilst the light automatic itself was employed solely in more or less distant and frontal covering fire instead of being handled as a weapon of mobility.¹ The French, however, considered that that organization led to "an erroneous interpretation of the possibilities of manœuvring the section of two squads," and consequently substituted for it the present section, of which the commander is no longer required to co-ordinate the movements of two squads but has only to get the section as a whole forward to its objective.

The reason for this change is to be found in the French thesis that fire is the dominant factor in battle. Infantry possesses two means of action—fire, which destroys the enemy or keeps his head down, and movement, which "by a judicious use of the ground brings closer and closer to the enemy a powerful system of fire capable of breaking his resistance. The attack is fire advancing. Defence is fire halted. Fire is the essential argument of battle and the tactics of small infantry

¹ See "The British and French Doctrines on Infantry in the Attack," by Captain B. H. Liddell Hart, *Army Quarterly*, July, 1922.

units is, above all, the art of so handling them as to produce the necessary fire. It is not a question of pushing forward small bodies against certain portions of the front or flanks of the enemy by more or less cunning manœuvre, but of concentrating an adequate number of projectiles on judiciously selected targets or areas of ground." All instructors are to be imbued with the paramount importance of fire and are not to let themselves be carried away into practising manœuvre for its own sake. "Before the actual assault the movements of a small infantry unit have no other object than to bring to bear upon the enemy a fire more effective than his own. In fact, practically every battle problem, for infantry, can be reduced to a problem of fire-power." Consequently in the attack the leading platoons are regarded as a "fire-echelon," the strength of which is regulated by the need for ensuring that the front is supplied with a number of light automatics sufficient to prevent any gaps in the fire of the echelon. Manœuvre, for infantry, is no more than the forward movement of means of fire, and may indeed involve no movement of personnel at all but only a change in the direction of the fire of automatic weapons already in action. Sometimes, it is true, the attackers may make some progress by infiltration through gaps in the enemy's fire, but "every unit held up for the time being uses its tools to improvise individual cover and the elements of trenches from the natural features of the ground": though it is also to try to neutralize the hostile fire and resume its advance as soon as possible.

It is hardly surprising, therefore, to find the action of the French section in the attack almost totally ungoverned by any idea of manœuvre. The light automatic is always to be ready to develop its full fire-effect, supplemented by rifle-fire, if necessary, at short ranges. In the approach-march the section acting as point advances with its riflemen in front. When contact is gained the riflemen try to locate the enemy. If the section cannot advance, it halts, takes cover, and brings the light automatic into action. If the enemy ceases fire or withdraws, the advance continues: otherwise "the section is for the time being immobilized; contact is established so far as it is concerned. The next step is the responsibility of the platoon commander." In the attack "the only manœuvre of the section consists in a steady advance or an advance by bounds, followed, when it can no longer advance without firing, by an alternation of fire and movement." The section commander "tries to find . . . avenues of approach not covered by the enemy's fire, so that his section can advance by infiltration. Failing that, he takes advantage of the fire of neighbouring sections to cover his advance by bounds." At ranges of 300 yards and under, it is normal for the light automatic to fire whilst the *tireur* is actually on the move. The whole section takes

part in the assault. When it is not following an artillery barrage the section tries to maintain a steady advance covered by fire from its light automatic—the *tireur* halting long enough to fire one magazine, but no longer—and from its rifle grenadier. If the enemy resistance continues, the final stage of the assault is preceded by the use of hand grenades.

The size of the French section tends to make it unwieldy and difficult to conceal, and in view of the fact that the riflemen are practically tied to the light automatic there seems to be little need for it to be so large. Its tactics disregard the possibility of manœuvre almost entirely; the fight for superiority of fire is everything. But "there must be the threat of a forward spring in order fully to fix the enemy's attention: fire alone will not deceive him. If fire alone could win victory, there would be no place in modern armies for infantry; the auxiliary arms can supply a far more effective fire. But the infantry arm can carry its fire to close quarters and supply that tangible human threat which causes the enemy to run."¹ It seems at least open to question whether the tactics laid down for the French section are likely often to result in that "threat of a forward spring" rather than in a fire-fight, conducted at a range of three or four hundred yards, which will frighten no well-trained enemy out of his position.

THE GERMAN INFANTRY SECTION

The German section (*Gruppe*) is organized into two squads (*Trupps*) as follows²:

1 <i>Gruppenführer</i>	.. ..	Section-commander.
1 <i>Truppführer</i>	.. ..	Second-in-command.
Light Machine Gun <i>Trupp</i>	..	Nos. 1 and 2 with the gun. Nos. 3 and 4 ammunition carriers.
Rifle <i>Trupp</i>	.. ..	7 riflemen.

Total : One commander and twelve other ranks.

Notes :—

- (a) All carry rifles except Nos. 1, 2 and 4 of the Light Machine Gun *Trupp*, who are armed with pistols.
- (b) 24 magazines are carried for the Light Machine Gun, each containing 25 rounds.
- (c) Hand grenades and tools are allotted by the company commander as required.
- (d) Rifle grenades are not mentioned.

¹ Captain Liddell Hart, *loc. cit.*

² See "*Ausbildungsvorschrift für die Infanterie*," *Heft 2, Teil (a)*, 1935, and *Teil (b)*, 1936.

(e) Although the section is the smallest infantry fighting unit, rifle and Light Machine Gun squads may be separated from each other and grouped with those of other sections when circumstances make this advisable.

FORMATIONS

The normal formations are Single File—with five paces distance between men—and *Schützenrudel*. The latter, which might be translated "Blob," is an open formation of two or three ranks with a frontage of up to fifteen paces and a depth of up to ten paces.

The formation of each *Trupp* is independent of the other, the normal distance between squads being up to eighty yards. The whole section may move closed up in single file when at a distance from the enemy.

Single File is considered especially suitable in close country and at night, "Blob" in open country and for debouching from cover or defiles.

The section commander decides which squad he will lead himself, putting the second-in-command in charge of the other. Each of them moves at the head of his squad and may, according to circumstances, be a considerable distance in front of it.

TACTICS

The general conduct of the infantry attack is described in *Truppenführung*, 1936, paragraphs 357 and 363–364, from which the following extracts are taken:—

"In the advance sections deploy and extend, in accordance with the ground and the action of the enemy, at irregular intervals and distances and with sufficient depth. Advantage must be taken of cover and of ground not beaten by fire. When the enemy fire makes it necessary, the advance will be continued by bounds or by stalking on the part of sections, squads or individuals. . . . Fire will be opened by L.M.G.s at practicable ranges, under cover of which riflemen will work further forward. The latter also take part in the fire-fight at short ranges, if necessary. . . . Hand in hand with the advance of these light troops follow the heavy infantry weapons echeloned to the rear. . . . Further progress towards the enemy is achieved by a careful combination of fire and movement. Forward units who find no covered approaches cannot dispense with covering fire. Whilst they work forward, their neighbours keep the enemy's heads down with their L.M.G.s, while the heavy infantry weapons co-operate. Up to the time of the decisive assault it is a matter of obtaining momentary local superiority of fire and of taking immediate advantage thereof for a rapid advance. Units which are held up provide

themselves with cover by digging and take every opportunity of renewing their advance. If weak spots are found in the defence, they are to be strongly attacked and reserves are to be pushed through them."

"It is of decisive importance that junior leaders should display initiative and co-operate closely with each other throughout every stage of the advance. . . . When portions of the enemy's defences are broken through on wide or narrow frontages, success must be exploited straight ahead. . . . The attack now usually resolves itself into a number of separate engagements. The flanks and rear of the foremost troops are protected by the heavy infantry weapons and other troops in reserve. . . . The initial success must be followed up as rapidly and in as great strength as possible in order that the fullest advantage may be taken of it. . . . The next task of the attacking infantry is to push right through in the original direction of the attack up to the enemy's artillery zone. Premature change of direction to a flank is not to be undertaken until the enemy has been completely broken through. The attacking troops must be assured that their flanks are protected. The reserves pressing forward will prevent any interference with the advance, deal with counter-attacks and maintain the momentum of the attack. . . . A wheel to a flank to roll up the enemy's front is the task of further reserves brought up for that special purpose."

Accordingly the German section commander, as contrasted with the French, is expected to be able to combine both fire and manœuvre. His Light Machine Gun constitutes his main fire-power, under cover of which his riflemen are to carry out their task—the destruction of the enemy at close quarters. He is warned that neither his L.M.G. nor his rifle squad can wage a prolonged fire-fight. Marksmanship is therefore important, and ammunition must be conserved. His L.M.G. is only to come into action at medium ranges, and then not unless absolutely necessary. The riflemen are to fire at short ranges only, and are to avoid taking part in the fight for superiority of fire altogether if possible. His chief aim is to obtain surprise fire-effect against whatever target is most likely to prevent the section from attaining its objective. Fire-control by the commander of the rifle squad is recognized as being virtually impossible once the squad is deployed, so that even though the commander may be able to indicate the target, every rifleman must be capable of controlling his fire himself. Whenever possible the section advances from cover to cover by skilful use of the ground. It may advance as a whole or by squads or even by men working their way forward individually. Movement may be by bounds or by creeping or crawling. It will often fall to the section commander to decide when to assault. Whenever he can, he is to arrange for the covering fire and the assault to come from different directions, so that the latter shall not mask the former. Cover-

ing fire may alternatively be provided by the L.M.G. firing on the move, but normally the L.M.G. does not take part in the assault and only moves on to the position after it has been captured. It may be advisable to throw hand grenades amongst an entrenched enemy immediately before the assault, special men being detailed for the purpose. The section commander usually leads the rifle squad in the assault, leaving the *Truppführer* or the No. 1 in charge of the L.M.G.

The German section, like the French, may be criticized as being too large to admit of easy control or easy concealment. But its commander is not mainly concerned with fire to the virtual exclusion of manœuvre, like the French section commander; nor is he concerned either primarily with fire or primarily with manœuvre, like one or another of the section commanders in the old British platoon of two Lewis gun and two rifle sections. His business is to combine fire and manœuvre and to make every effort to achieve surprise in both. It is not unreasonable, therefore, that his section should be subdivided into a fire-unit and a manœuvre-unit—the former also capable of manœuvre and the latter of fire—his task being to co-ordinate the actions of the two though he can personally lead only one of them. Moreover this subdivision results in each squad being small enough to be easily handled and easily concealed. The German theory of the conduct of infantry in the attack originates from the infiltration tactics of 1918, in accordance with which "each man with a rifle had to work his way forward independently, the light machine guns with their crews to keep strictly together, but as a free and independent group."¹ Such tactics make great demands both upon the fighting powers of the section and upon the leadership of its commander. The organization of the section into two squads gives it the necessary powers of fire and manœuvre, and there is no apparent reason why an experienced and well-trained N.C.O. should not prove capable of exercising the standard of leadership required.

THE BRITISH INFANTRY SECTION

The British section consists of :—

- 1 Commander.
- 1 Second-in-command.
- 5 Other Ranks.

The equipment with which it is furnished enables it to be employed either as a rifle-section or as a light machine-gun section; but its small size precludes it from operating as both simultaneously.

The four standard battle formations are laid down in "Infantry Section Leading," 1934, Sect. 36. "It is for the section commander to

¹ *Army Quarterly*, April, 1936, p. 100. See also *The Official History of The War, 1918*, Vol. I, p. 157.

decide which formation is the best for his purpose. He will often have to change his formation during the advance."

TACTICS

Infantry Training, 1937, stresses the importance of mobility and manœuvre. It has been said that the platoon is primarily a rifle platoon ; and the doctrine that in the attack manœuvre is of greater importance to infantry than the fire of its own weapons is illustrated by the following extracts from Field Service Regulations, Vol. II, 1935 :—

"For success in the attack, infantry depends on the skilful use of ground to secure surprise, or the cloak of darkness or smoke to conceal its advance, and on artillery fire or the aid of tanks to break a passage through the wire, if necessary, and to reduce the fire power and morale of the enemy. In favourable conditions . . . a skilful and enterprising infantry may advance under cover of its own weapons."

" . . . Infantry should not open fire as long as it can get forward without it : a fire-fight must be to the advantage of the defender."

Consequently the company commander must, before an attack, consider "the equipment of the various platoons—whether rifles or light machine guns, grenades or anti-tank rifles, or extra ammunition will be required. The proportion of sections in each platoon to be equipped with light machine guns will depend on circumstances. If mobility is of paramount importance, it may be desirable for the platoon to consist only of rifle sections ; if fire production is of main importance, all sections may be equipped with light machine guns ; on other occasions a proportion of sections equipped with each may be desirable" (Infantry Training, Sects. 66 (2) ix, and 67 (1)).

The section, therefore, may find itself sent into the attack either as a rifle or as a light machine-gun unit. In either case its object is "to advance as close as possible to the enemy's position without undue loss and without having to check the speed of the advance by opening fire. Section commanders must lead their sections so that they use what cover exists ; at the same time they must not lose touch with the remainder of the platoon. . . . The essential point is to make full use of all cover, varying the formation of the section to suit the ground. . . . Throughout the advance, sections should be on the lookout to locate enemy posts and to report them to the platoon commander." Covering fire when necessary is to be organized by the platoon commander, "but section commanders will also open covering fire on their own initiative whenever a good opportunity presents itself. The section is the fire unit," but "if . . . control by word of command is no longer possible, then each individual rifleman (or) light machine gun . . . must act

independently. If the section is held up, it must develop its maximum fire power, try to locate the enemy, report to the platoon commander, and advance again as soon as possible. If in the later stages of the attack the fire of the light machine-gun sections is not required . . . they should join the rifle sections in the final assault."

The British regulations, like the German, stress the importance of mobility and manœuvre and deprecate infantry taking part in the fire fight in the attack. In this respect they afford a striking contrast with the French whose insistence upon the predominance of fire in battle appears likely to lead to "stickiness" on the part of infantry in the attack. It must not be forgotten, however, that attacking infantry need their light machine guns both in order "that the maximum fire power can be produced" when they are held up and to enable them to defeat enemy counter-attacks when they have reached their objective. Moreover the demoralizing effect upon the defenders produced by an automatic weapon firing at close range and from an unexpected quarter can hardly be over-estimated. In these respects the value of any section which is sent into action without its light machine gun is reduced to a minimum. The company commander, in deciding the proportion of sections to be equipped with light machine guns, is instructed to consider the relative importance of mobility and of fire power in the particular circumstances ; but it is hard to see how anyone can say at the outset of an engagement which of these is going to prove of chief importance for the rest of the day, and it is exceedingly improbable that a section which goes into action without its light machine gun will ever see it again until it comes out or at any rate until nightfall. It is questionable therefore whether any section should ever be sent into the attack in normal conditions without its automatic weapon.

The British and German doctrines differ from each other notably in the matter of the co-ordination of fire and manœuvre. In the German Army, the infantry section commander has at his disposal both a fire unit and a manœuvre unit, and it is his business to co-ordinate the actions of the two. The British regulations on the other hand regard the platoon as "the smallest sub-unit that can be divided into interdependent bodies each capable of fire or manœuvre" : the objective is a platoon, not a section objective ; it is the platoon commander who is to co-ordinate the fire and manœuvre of his platoon and "organize the fire of certain sections . . . to enable the remainder to continue the advance." True a light machine-gun section "must also be prepared for manœuvre, while the rifle section has considerable fire-power at its disposal." But the section is numerically so weak that not more than three or four men can be made available to manœuvre under cover of the light machine gun—and they are carrying magazines for the gun—while the difficulty of

controlling the fire of a rifle section in the attack detracts considerably from the effectiveness of its fire-power. The British platoon must therefore choose between two alternatives : either it goes into action with all its fire-power (which, on the whole, seems normally indispensable), and, in consequence, with its power of manœuvre considerably curtailed ; or it can retain its ability to manœuvre at the cost of some or all of its fire-power.

CONCLUSION

Organization should wait on tactics and tactical doctrine should be conditioned by the realities of the battlefield. The elements of infantry tactics are fire and manœuvre, but a proper combination of these on the part of the foremost troops in the attack is no easy task. The fundamental question is which sub-unit commander can most reasonably be expected to co-ordinate these elements throughout the advance. The French—in so far as they consider manœuvre at all—and the Germans both assign this task to the section commander, whilst our own regulations, save to a very limited extent, assign it to the platoon commander. But can the platoon commander in actual practice control the fire and manœuvre of his three sections once he has launched them to the attack ? He can decide, if it has not been decided for him by the company commander, how many of his sections are to be armed with light machine guns : he can issue initial orders indicating his general plan and stating which section or sections shall give covering fire if the occasion demands it ; and when the attack commences he can move either with that portion of his command with which he intends to carry out the assault or with his reserves so as to employ them to the best advantage as the attack develops. But it seems scarcely credible that anyone who ever actually commanded a platoon in action on the Western Front should conceive of the platoon commander in modern warfare “ organizing the fire of certain sections . . . to enable the remainder to continue the advance ” in the obscurity and confusion of the attack, or receiving reports from and sending orders to his sections between zero hour and the next lull in the battle.¹ It appears reasonable, therefore, to suggest that the Continental practice of depending on section commanders for the co-ordination of fire and manœuvre in the forefront of the attack is the more, if not the only, feasible solution of the problem ; and if section commanders are charged with this duty they must be given the requisite means of carrying it out.

¹ Infantry Training, Sect. 66 (4), makes it clear that the prescribed methods of attack “ against uncoordinated resistance ” are equally applicable when the infantry are working to a timed programme “ against organized resistance ” but have dropped behind or have encountered opposition not adequately dealt with by the supporting arms.

It may be objected that it is asking too much of the section commander to expect him to control the actions both of an automatic weapon and of a striking force, however small. But an experienced full-rank N.C.O. should find this task relatively easier than that of the platoon commander (who may be only a sergeant) under our existing organization. Indeed the British platoon may be compared more nearly with the German section (than which it is numerically only fifty per cent. stronger) than with the German platoon. If it takes only one or two light machine guns into action it corresponds to the German section plus an additional rifle or light machine gun squad—an addition which makes it considerably more difficult for its commander to control. If it takes its three guns into action it has the fire-power of a German platoon, but it retains little or no manœuvre power since every man is more or less tied to the gun which he serves. In short, the British platoon consists of three sections each capable of fire *or* manœuvre, whilst the German has three sections each capable of fire *and* manœuvre.

How then should the section be organized if its commander is to be provided with the means both of fire and of manœuvre? It must be larger than our present section, which is so small that one or two casualties will severely cripple it and leave it able to do little more than keep its light machine gun in action. It must not be larger than absolutely necessary, though the subdivision into two "squads" will help to overcome the difficulties of control and concealment. It must be large enough to be able to carry and make use of all the weapons at its disposal, namely, the light machine gun for fire-power, rifles and bayonets as weapons of opportunity and for the assault, and hand grenades for demoralizing the enemy at close quarters. The French employ five men, the Germans four to serve the automatic weapon. Four should perhaps suffice: Nos. 2, 3 and 4 could carry six magazines apiece instead of three, their load of rifle ammunition being reduced to, say, 20 rounds a man. (The German Nos. 2 and 3 each carry eight magazines of 25 rounds each.) The rifle squad could not well be reduced below five men—as compared with the French four and the German seven—giving, with a N.C.O., an assaulting strength of six bayonets. There must be a second N.C.O. to take charge either of the light machine gun or of the rifle squad as ordered by the section commander. Hand grenades should be carried by the riflemen. It hardly seems necessary for leading platoons in the attack to carry anti-tank rifles.

The following, then, summarizes the proposed organization of the section:—

Commander—Sergeant or corporal, carrying a rifle, 50 rounds S.A.A., and one grenade.

Second-in-command—Lance-corporal, similarly equipped.

L.M.G. Squad—No. 1 carrying the gun and three magazines.
Nos. 2, 3 and 4 each carrying a rifle, 20 rounds S.A.A., and six magazines.

Rifle Squad—Five men each carrying a rifle, 50 rounds S.A.A., and two grenades.

The total strength of eleven of all ranks compares with twelve in the French and thirteen in the German Army.

These figures, however, represent no more than tentative suggestions. The main conclusion advocated as a result of the considerations put forward in this article is that the infantry section should consist of two elements—fire power provided by a light machine-gun squad and manoeuvre power in the form of a rifle squad. The actions of these two must be co-ordinated by the section commander.

THE DEVELOPMENT OF THE FLOAT SEAPLANE

By H. J. C. HARPER, A.M.Inst.C.E., A.F.R.Ae.S.

PART I.—THE PRE-WAR AND THE WAR PERIODS

THE development of the float seaplane has in some respects been slower than that of the flying-boat.¹ Very much was asked of this type of aircraft during the War, and although hampered by many limitations, seaplanes of various types did much useful work which could not have been performed as well by either landplanes or flying-boats.

The idea of fitting pontoons or floats to heavier-than-air craft appears to have been conceived by several pioneers prior to the first aeroplane flights of the Wright Brothers in 1903. William Kress, an Austrian engineer, was the first actually to fit pontoons to an aeroplane. After forty years of experimenting with various types of aircraft he produced what he called a triple monoplane which had three planes one behind the other at the same level. A 30-H.P. engine, driving two propellers, was installed and a pair of long aluminium pontoons were fitted. The tests took place between 1898 and 1902 and were made at the Unter-Tullnerbach docks, Austria. The machine is stated to have travelled over the water under limited control at a speed of some 10–12 miles an hour. The low power of the engine and the weight of the machine prevented it leaving the water. It was wrecked at the end of 1901 owing to gusty winds and a leak in one float, and the experiments were shortly afterwards abandoned through lack of funds.

In 1905–6 three French pioneers—Ernest Archdeacon, Gabriel Voisin, and Louis Bleriot, experimented with gliders and, after wrecking several, thought that water would be more elastic than land and less dangerous to the operator. They accordingly fitted a pair of boat-like floats to one of the gliders. A number of tests were carried out, the glider being towed by a fast motor-boat. On one occasion it rose to a height of over 50 feet and remained in the air for some 160 yards. Subsequently to these experiments, Voisin and Bleriot constructed two hydro-aeroplanes. In one the planes were two elliptical-shaped cells fitted with three pairs of cylindrical floats and a 24-H.P. engine. The other had parallel planes in front and elliptical cells at the rear. The floats were improved in shape and two 24-H.P. Antoinette engines were

¹ See "The Development of the Flying Boat" in the JOURNAL for 1937, pages 359 and 566.

fitted. The experiments lasted about a year, but with little result. The principal troubles appear to have been insufficient horse-power for the weight and inefficiency of the floats.

In 1905, Dr. F. A. Barton and Mr. F. L. Rowson made experiments with a glider of 34 feet span fitted with floats. Several towed flights were made, but owing to failure to secure a suitable engine to pursue the tests, further work was abandoned. In 1906-7 experiments were made in America by Israel Ludlow with a large towed float glider. Whilst being towed by a destroyer the glider was wrecked. In 1907 the Wright brothers experimented with a pair of hydroplane floats coupled together to form a raft. On this was fitted an engine driving two air propellers. The tests, which were carried out on the Miami River, showed a certain amount of promise, but the dam which retained the water on which the experiments were made broke, and the Wrights decided not to continue.

A young French engineer, Henri Fabre, was the first to be successful in leaving the water. After a series of experiments lasting over three years, he produced a hydroplane of unusual design fitted with a 50-H.P. Gnome engine. The first flight, of about a quarter of a mile at a height of six feet, took place on 28th March, 1910. In the following May a better flight was made of about a mile at a height of thirty feet, but on landing the machine was badly damaged. A number of further flights were made, but when it was wrecked at Monaco during a storm, Fabre discontinued his experiments.

In the United States, Glen Curtiss had entered the field of experimenters. He had done a considerable amount of flying and had also constructed a successful aeroplane to his own design. Being impressed with the possibilities of an aircraft which could operate from the water, he fitted twin pontoons with separate hydroplanes beneath, to his aeroplane. His tests carried out during the Autumn of 1908 were unsuccessful, the machines failing to get off the water. During 1909 he gave the problem much further study, and in the Spring of the following year built a new machine. A light but strong canoe was fitted beneath the wings and along the centre line in place of the usual wheels. Metal hydroplanes were fitted fore and aft beneath the canoe. Conical capped tin cylinders also with hydroplanes were fitted beneath each wing tip to stabilize the machine. The taxi-ing trials were very successful, the machine rising on the hydroplanes and manœuvring well at all speeds. The 40 H.P. engine was unfortunately not powerful enough to give the necessary speed for flight. Shortly afterwards Curtiss fitted pontoons and hydroplanes to a landplane in addition to the usual wheels. He took off from the land and after an extended flight alighted

safely upon the water. As a result of the experience gained during these experiments he produced a float in which the hydroplane surfaces were incorporated. This was found to have much less water and air resistance than the previous arrangement of separate hydroplanes. During the summer of 1910 a new aeroplane was built and to this the improved float was fitted. A 60-H.P. engine was installed in the machine, which was of the pusher type with elevator in front as well as the tail surfaces supported on booms. The first public flight was made on 26th January, 1911, when the hydro-aeroplane rose from the water and after a short flight safely alighted. An improved aircraft was already nearing completion, and on 17th February, 1911, he introduced it to the United States navy by flying to the cruiser "Pennsylvania" and alighting alongside. The aircraft was hoisted in by means of one of the ship's boat cranes and put on deck. Subsequently it was hoisted outboard and Curtiss flew back to his base at North Island, near San Diego. This hydro-aeroplane had a speed of 60 m.p.h. in the air and 50 on the water. As a result of its success several of the same type were purchased by the Navy Department, and others were used for exhibition flights.

During 1911 some interesting experiments in flying off water were carried out at Barrow-in-Furness by Commander Oliver Schwann, R.N. This officer had been stationed at Vicker's Barrow works as Admiralty representative during the construction of No. 1 Naval Rigid Airship. He bought an Avro biplane fitted with a 45-H.P. Green engine and experimented with several different types of floats. On 18th November, 1911, he succeeded in getting off the water and flying a short distance, but crashed when alighting. The machine was subsequently repaired and in the following March it successfully flew off and alighted on the water, the pilot being Mr. S. V. Sippe.

In the winter of 1911 Mr. Oswald Short, one of the firm of Short Brothers which had been building aeroplanes for several years, carried out a number of experiments with various types of floats and flotation bags. Although these experiments were made primarily with the object of preventing the total loss of an aeroplane forced down in the sea they mark the commencement of the activity of Short Brothers with regard to aircraft operating from the water. In December, 1911, a Short pusher biplane was fitted with tubular bags secured to the wheel skids and one under the tail. It was this aeroplane which Lieutenant Samson, R.N., flew off the special platform of H.M.S. "Africa" in December, 1911, and brought down on to the sea without damage.

In 1912 the Short tractor seaplane with 100-H.P. Gnome engine was produced. This was originally designed as a landplane and was modified to permit of the fitting of a float undercarriage in place of wheels. Trials

were successfully carried out in March, 1912. This machine was the forerunner of all the Short seaplanes, and was flown off a special platform erected in the battleship "London" by Lieutenant Samson.

In the Spring of 1912, successful flights were carried out by Mr. Ronald Kemp with a monoplane designed by Mr. Gnosspeilus. This had a large single-stepped float attached to an elaborate undercarriage. It was claimed that it was the first British seaplane to be fitted with wing-tip floats as an aid to stability on the water.

On 4th July, 1912, Lieutenant Samson flew a Short seaplane round the coast from Eastchurch to Portsmouth in a little over three hours. This was the longest non-stop point to point flight which had to this time been made by a British pilot.

Several other British seaplanes were built in 1912, and mention must be made of the Blackburn, which was a biplane with 80-H.P. Gnome engines and twin floats. It was a two-seater tractor and had a speed of 65 m.p.h. Graham White also produced a seaplane. This was fitted with an 80-H.P. Gnome engine and had a maximum speed of 65 and a minimum of 50 m.p.h.

At the end of December, 1912, the first seaplane station in this country was commissioned at the Isle of Grain, at the mouths of the Thames and Medway. At this date there were three seaplanes on charge of the Naval Wing out of a total of fifteen aircraft. The selection of sites for other naval air stations was proceeded with, and in April, 1913, three new stations were opened. These were situated at Calshot, Felixstowe and Great Yarmouth. The first two were seaplane stations, but the last also had an aerodrome for landplanes.

In May, 1913, H.M.S. "Hermes," an old cruiser of 5600 tons, was commissioned as the parent ship of the Naval Air Service. She was equipped to carry three seaplanes, which were hoisted in and out by means of derricks. A flying-off platform was built over her bows, and during the Naval Manceuvres of July, 1913, a Caudron fitted with wheels as well as floats was flown off this platform. A Short seaplane with 160-H.P. Gnome was also embarked in the "Hermes." This seaplane is particularly noteworthy as not only was it a great advance on contemporary seaplanes but the wings were made to fold. The wing-folding mechanism was evolved by Shorts and solved the problem of stowing a number of seaplanes on board ship. Other seaplanes which took part in these manœuvres were Short seaplanes with 80 and 100-H.P. Gnome engines, a Sopwith seaplane with 100-H.P. Anzani, a Maurice Farman with 70 and 120-H.P. Renault engines, and several Borel seaplanes with 80-H.P. Gnomes.

Much useful experience was obtained about reconnaissance work,

and it was established that it was absolutely necessary for naval aircraft to be fitted with wireless apparatus if their value for this work was not to be very limited. The seaplanes stood up to service conditions very well : the weather was severe—driving rain, fog and heavy seas had to be contended with. Except for damage to floats and undercarriages the only casualty was a Borel seaplane, belonging to the "Hermes," which was broken up in a heavy sea. It was found that to withstand alighting and taking-off from a sea that was at all rough threw considerable loads on the seaplanes, and that, therefore, it was necessary to make them stronger than landplanes. This necessarily increased their weight and consequently their stalling speed. The technique required to take off, alight and manœuvre on the water had to be developed, and pilots new to seaplane work required careful training in handling their aircraft on other than calm water.

Much useful experimental work was carried out at the various seaplane stations with regard to developing these seaplanes for naval purposes. Means were sought for improving signalling methods, both visual and wireless. Improvements in floats and undercarriages were also tested out. The launching of seaplanes from the beach proved difficult at most stations. The trolleys for transporting the aircraft up and down the beach were often difficult to move over the shingle, and damage was liable to occur when the seaplane was being floated off the trolley. This difficulty was overcome by constructing slipways extending for some distance into the sea whereby the seaplane could be launched into deeper and generally speaking smoother water.

In the summer of 1913, *The Daily Mail* offered a £5000 prize for a flight round Britain. Commencing at Southampton, the circuit included Ramsgate, Yarmouth, Scarborough, Aberdeen, Cromarty, Oban ; then via the Caledonian Canal to Dublin, Falmouth and thence to Southampton, a total distance of 1540 miles. A Sopwith 3-seater tractor seaplane with Harry Hawker as pilot and H. Kauper as passenger, was the only starter. After experiencing a series of difficulties and mishaps *en route*, Hawker crashed whilst alighting near Dublin, after covering 1043 miles. Neither he nor his passenger were injured but the machine was wrecked. In view of his fine performance he was awarded a special prize.

In September, 1913, the Wight seaplane was produced. This was built at Cowes by J. Samuel White & Co. to the design of Mr. Howard Wright. It was a pusher biplane with a 160-h.p. Gnome engine. The tests were eminently satisfactory. It got off the water in 60 yards, the long narrow floats proving capable of standing up to quite choppy seas. The top speed was 63 miles an hour.

In October, 1913, Mr. Winston Churchill, the First Lord of the Admiralty, stated that the development of a standard seaplane suitable for war purposes was proceeding rapidly. He recommended two types—an oversea fighting seaplane for operating from a ship, and a scouting seaplane to work with the fleet. As a result twenty-five of the former type and twenty of the latter were ordered.

At the beginning of 1914 several Henri Farman seaplanes with either 90 or 120-H.P. Gnome engines were delivered. A considerable amount of flying was done with these and in the opinion of pilots they were handy to fly. Further experience with them, however, showed that they were not very seaworthy, and they did not survive long after the outbreak of the War.

It is of interest to note that at the Aero Show held at Olympia in March, 1914, out of twenty-five aircraft exhibited nine were intended to operate from the water. The seaplane exhibits were two standard French monoplanes fitted with floats, one built by Bleriot and the other by Nieuport; an Avro 504 tractor biplane with floats instead of wheels; a Henri Farman pusher biplane; an experimental pusher biplane built by the Hamble River, Luke & Co. with a 150-H.P. N.A.G. engine; and a big Wight twin-float biplane with 200-H.P. Salmonson engine.

On 20th April a Sopwith Tabloid biplane, which had been converted into a single-seater and fitted with floats, won the second contest for the Schneider Trophy at a speed of 86 m.p.h. Mr. Howard Pixton was the pilot. This victory was considered to be the most important event which had happened in the history of British aviation, for a British pilot with a British seaplane had proved superior to any other combination of pilot and seaplane on the continent of Europe.

The Naval Wing of the Royal Flying Corps ceased to be associated with the Military Wing on 23rd June, 1914, when it became the Royal Naval Air Service, administered by the Admiralty. It was laid down that this new service would embrace all seaplanes, aeroplanes, airships, balloons, kites and any other types of aircraft that might from time to time be employed for naval purposes. This complete reorganization is an indication of the importance which was attached to aviation by the naval authorities of that time.

At the Naval Review, held on 18th-22nd July at Spithead, flights of seaplanes from the air stations at the Isle of Grain, Great Yarmouth, Dundee, Felixstowe, and Calshot flew past the Royal Yacht, and demonstration flights were also made.

THE WAR PERIOD

At the outbreak of the War the Royal Naval Air Service had a total of forty landplanes and thirty-one seaplanes. Of the latter the majority were designed and built by Short Brothers ; they included six Short seaplanes with 100-H.P. Gnome engines, nine with 160-H.P. Gnomes, and one with a 135-H.P. Salmson engine. In addition there was an experimental Short pusher seaplane with 200-H.P. Salmson engine and a 1½-pdr. gun mounted in the front of the nacelle. The other seaplanes were two Sopwiths (100-H.P. Anzani), two Sopwiths (90-H.P. Austro-Daimler), one Wight (120-H.P. Salmson), three Wights (200-H.P. Salmson), one Maurice Farman (70-H.P. Renault), two Maurice Farmans (100-H.P. Renault), two Henri Farmans (80-H.P. Gnome), and one experimental Royal Aircraft Factory seaplane with 100-H.P. Renault. There were, in addition, a number of seaplanes on order, and arrangements were made for the delivery of these to be speeded up, while orders were placed for additional machines. Sopwiths were given the task of producing a single-seater seaplane the design of which was based on the modified Sopwith Tabloid, which had a few months previously won the Schneider Trophy. Known as the Sopwith "Schneider" or "Baby" seaplane, these aircraft went into service in 1915 and continued in use until 1918. Various types of engines were fitted, including the 100-H.P. Monosoupape Gnome, and later, the 110 and 130-H.P. Clerget. Towards the end of the War these little machines were expected to carry two machine guns, bombs, carrier pigeons and a sea anchor.

Short Brothers produced a large number of seaplanes fitted with the 80 and 100-H.P. Gnome and the 135-H.P. Salmson engines, and later the 150-H.P. Sunbeam. In September, 1914, the design of the famous 184 Type was put in hand.¹ This machine had a 225-H.P. Sunbeam engine and was originally designed as a torpedo carrier. It was first flown in 1915 and proved very satisfactory. It followed Short's usual design of wide wing span with narrow chord and gap. Twin main floats and small floats on wing tips and beneath the tail were fitted. It was designed purely as a seaplane and was not merely an adaptation of a landplane. It was produced in large numbers both by the parent firm and also by sub-contractors. At a later date the 260 H.P. Sunbeam engine was installed. The speed of the Short 184 was about 77 m.p.h.

A number of Wight seaplanes with 200 H.P. Salmson engines were also built, but the type was considered to be inferior to the Shorts and did not remain in service after 1915. The Farman seaplanes also remained in service until 1915. The Sopwith two-seater seaplane does not appear to have been produced in large numbers, and the energies of this company became more devoted to landplanes.

¹ See Frontispiece of this Journal.

The Fairey "Campania" was designed in 1916 for reconnaissance with the fleet. The overall dimensions of this seaplane were limited to suit the hatchways and stowage accommodation of the seaplane carrier, H.M.S. "Campania." Three experimental types were built, but the one to go into service had a 260 h.p. Sunbeam engine. It weighed 5330 lbs. and had a top speed of 85 m.p.h. and a landing speed of 46 m.p.h. It was fitted with the patent Fairey flap gear which reduced the speed required for taking off and landing. A number of the type went into service. The Fairey type III or N10, also with the 260-h.p. Sunbeam engine, was the next to be produced. Its span and weight were less than that of the "Campania" type, and various improvements resulted in an increase of speed to 104 m.p.h. The Fairey III B was a seaplane bomber. The same fuselage as the Type III was used with a set of wings of larger span, larger floats and stronger chassis. In 1917 supplies of the Rolls Royce 375-h.p. Eagle engine became available, and it was fitted in the Fairey III C. This consisted of the standard fuselage of the Type III and the chassis and floats of the Type III B, with enlarged fuel tanks giving an endurance of 6 hours. The top speed was increased to 110 m.p.h. This machine was used for reconnaissance and became very popular in the Service. It was retained in use for several years after the War.

It may be of interest to record some of the useful work carried out by seaplanes during the War. Upon the outbreak of hostilities, aerial patrols of the East Coast were inaugurated, the seaplanes being used to carry out reconnaissances for some distance out to sea. In these early patrols no enemy appears to have been encountered, which was perhaps as well, as, owing to the lack of proper armament, many of the seaplanes could not have attacked with much hope of success. In due course this state of affairs was remedied as more bombs and machine guns became available. After the launching of the German submarine offensive, anti-submarine patrols were added to the duties of the seaplanes, and at a later date they were also used for escorting convoys of merchant ships through the danger zones. When the Sopwith Schneider seaplanes came into service they were used for short patrols and also for emergency calls. Upon a submarine being reported a Schneider was sent off to the point at which the enemy was reported. A number of submarines were bombed by these and other seaplanes, and apart from any damage inflicted, the enemy was harassed by the watchfulness of these patrols. Schneider seaplanes were also used for anti-airship patrols, but, although several Zeppelins were sighted, none were brought to action.

The operations of the seaplanes carried in the carriers "Empress,"

"Engadine" and "Riviera" in the early part of the War are of interest. In the raid on Christmas Day, 1914, on Cuxhaven, although the Zeppelin sheds were not located, a close reconnaissance of the German port was carried out and a good deal of damage done by the bombs dropped. The battle cruiser "Moltke" and a cruiser collided in their hurry to get under way and were badly damaged. Further operations were hampered by fog and rough seas, which prevented the seaplanes getting off the water.

As an example of the variety of seaplanes in service in the early days of the War the equipment of the first British seaplane carrier, H.M.S. "Ark Royal," may be quoted. When she sailed for the Eastern Mediterranean on 1st February, 1915, she had embarked : one Short two-seater (200-H.P. Salmson engine), two Wight two-seaters (200-H.P. Salmson) and three Sopwith two-seaters (100-H.P. Gnome). All the seaplanes except the Short were deemed fair-weather craft, and it was found to be most difficult or even impossible to get them off in a choppy sea. In spite of these limitations they did much useful work in examining the Turkish forts of the outer defences and in locating the batteries and trenches along the coast for a few miles up the Straits. They also did valuable service in co-operating during the landings.

A notable success was achieved on 12th August, 1915, by a Short seaplane from H.M.S. "Ben-my-Chree." This machine had been adapted to carry a torpedo slung beneath its fuselage. Flight Lieutenant G. H. K. Edmonds took off from the Gulf of Xeros, flew across the Gallipoli Peninsula, sighted a large Turkish transport and torpedoed and sank it. This brilliant exploit will go down to history as the first instance of a surface craft being torpedoed from the air. Five days later Flight Lieutenant Dacre, flying another Short, torpedoed a Turkish steamer. A number of torpedo attacks were made subsequently, but in none of these was the same measure of success achieved. Occasions were rare when the ideal conditions of sea and wind prevailed which were so necessary to enable the heavily-loaded seaplane to get off the water. To compensate for the weight of the torpedo the fuel had to be cut down to barely an hour's supply. This was a further handicap, as the radius of action was therefore very limited and the difficulty of locating a hostile ship and launching an attack was greatly increased.

In May, 1916, Commander Samson was given command of H.M.S. "Ben-my-Chree" and the two captured German steamers "Anne" and "Raven II," which had been converted into seaplane carriers. These ships were equipped with Sopwith "Schneiders" and 225-H.P. Short seaplanes. With this little force he greatly harassed the Turks in the Eastern Mediterranean, the Gulf of Suez and the Red Sea. Not

only were numerous reconnaissance flights carried out, but bombing raids were made upon the enemy's positions with 112, 65, 20, and 16-lb. bombs.

The seaplane work carried out in H.M.S. "Campania" is also of interest. This ship, an ex-Cunarder of 22 knots, had been converted into a seaplane carrier for co-operation with the Grand Fleet. When working in the stormy waters of the North Sea considerable trouble was experienced in hoisting the seaplanes out without damage, and even then the floats often failed to stand up to the pounding they received. In addition it was often found to be impossible to get the seaplanes to take off from a rough sea. A scheme was consequently evolved of flying off from the flight deck in the fore part of the ship. The first trial was carried out in August, 1915. Wheels were fitted beneath the floats of a Sopwith Schneider and were dropped as soon as the machine got into the air. The ship was steamed into a 17-knot wind and the Sopwith got off after a run of 113 feet. The flight deck was subsequently lengthened, and in June, 1916, a 225-h.p. Short seaplane was flown off. This system of flying off was greatly developed in the "Campania," and was afterwards adopted in some of the other seaplane carriers.

In 1917 and 1918 a very effective system of anti-submarine patrols was carried out in the Mediterranean by seaplanes using a number of seaplane carriers as mobile bases. Seaplanes were also used for the protection of convoys, and it is of interest to note that from April, 1917, until the end of the War, of the 312 ships torpedoed while in convoy in only two cases were attacks made when the vessels had an air escort.¹

NOTE—Part II—Post-War Period, will appear in the November JOURNAL.

¹ Perhaps the most important pioneer work carried out by seaplanes, so far as the Navy is concerned, was that of initiating and developing spotting of ships' gunfire. A brief reference to the first experiments and to the first school for training Naval Observers, founded at Calshot on 21st June, 1915, is made in the Official History, *The War in the Air*, Vol. II, pp. 262-3; but no account is given (perhaps the reports never reached the Admiralty) of the experiments carried out between H.M.S. "General Craufurd"—a 12-in. monitor, and the seaplanes of H.M.S. "Riviera" in November and December of that same year. The system evolved as the result of those practices was the basis of all efficient spotting for the subsequent bombardments of the Belgian Coast and, in due course, for air observation of fire in the Fleet. Moreover, it was the development of wireless communications between ships and aircraft, which was largely the outcome of these practices, that eventually enabled the latter to be usefully employed for fleet reconnaissance work.—EDITOR.

THE FRONTIER POLICY OF THE GOVERNMENT OF INDIA

By LIEUTENANT-COLONEL SIR RALPH GRIFFITH, K.C.S.I., C.I.E.

On Wednesday, 23rd March, 1938, at 3 p.m.

FIELD-MARSHAL SIR PHILIP CHETWODE, Bt., G.C.B., O.M., G.C.S.I.,
K.C.M.G., D.S.O., in the Chair.

THE CHAIRMAN : Sir Ralph Griffith is going to speak to us this afternoon on a perennially interesting, fascinating and apparently still insoluble problem. He knows as much as anyone else knows about the subject : he has been Deputy Commissioner at Peshawar, Resident of Waziristan, Chief Commissioner of the North-West Frontier Province, and finally Governor of the newly constituted North-West Frontier Province.

LECTURE.

In this lecture I propose to confine my remarks as far as possible to what are known as the "Tribal Areas" of the North-West Frontier of India. To any who may be unfamiliar with conditions on the Frontier, I may explain that what has been generally known as the Frontier Province is now divided by statute into two separate and distinct parts. Of these, the first part comprises six regularly administered revenue-paying Districts, of which one lies Cis-Indus and the other five cover the Trans-Indus plain up to the foot-hills of the Suleiman range. This area, which formed an integral part of the Punjab Province till Lord Curzon separated it in 1901, is now the regulation "North-West Frontier Province," administered by a Governor with a Cabinet of Ministers, which is responsible to an Assembly of elected members. The "Khudai Khidmatgar"—or Congress-Party—identical with the notorious "Red Shirts" of 1930–31, are at present in power, and, under their leader, Doctor Khan Saheb, are learning something of the difficulties attending administrative responsibility. They are, I believe, endeavouring whole-heartedly to use the powers with which the new constitution has endowed them to work constructively for the welfare of the Province and its people.

The second part—that with which we are concerned to-day—comprises the tribal hills, which lie between the external administrative boundary of the regulation Province, just described, and the international boundary, best known as the Durand Line, which separates

India from the Kingdom of Afghanistan. By contrast with the fertile plains of the North-West Frontier Province, this region consists, for the most part, of barren hills and precipitous tree-covered mountains which rise to their greatest height along the international border. Populated by Pathans—ethnically the same people as those who form the majority of the populations of the Frontier Province and of Afghanistan—it is not administered in the sense that the Province, and India as a whole, are administered. That is to say, it pays no revenue, and has no Police or Law Courts. Its people are subject to no laws—except such tribal laws as they may be pleased, from time to time, to impose upon themselves—and in it the King's writ does not run. For purposes of control it is for the most part divided into convenient tribal areas known as Political Agencies, and the Political Agents carry out their duties under the orders of the Governor who, for the purposes of these Tribal Areas, is designated Agent to the Governor-General, and is directly responsible to the Viceroy. His duties, which he carries out through the Political Agents and also by direct personal contact with the tribesmen, are, not to interfere in the internal affairs of the tribes, but to keep in close, and so far as possible friendly touch with them ; to disburse the tribal allowances, which have been fixed by treaty from time to time ; to see that the tribes implement the responsibilities, also fixed by treaty, for the fulfilment of which they receive their allowances, and to act as the expert local adviser of the Viceroy on tribal affairs.

PATHAN HISTORY AND CHARACTERISTICS

Before we proceed to an examination of the general problem of the Tribal Areas it will, perhaps, be as well to glance at the past history of the Pathan tribes which occupy them and to consider, very briefly, their social and temperamental peculiarities. So far as the remoter origins of these tribes are concerned, it seems to be generally accepted that the original population of the tribal hills were of Indian origin ; that most of this population was conquered and driven out by certain Afghan tribes, and that these conquerors were in turn expelled, about a thousand years ago, by the Orakzai, Mohmand, Wazir, Yusufzai, and other tribes, which had just suffered a similar expulsion from their native seats in the southern areas of Afghanistan. Once settled in the hills of the Suleiman range the tribesmen seem quickly to have shown their qualities. Engaged perpetually in feuds among themselves and in intersectional warfare in the hills, they appear none the less to have realized quickly the necessity of combination against a common enemy and to have learned to eke out the meagre livelihood afforded by their rugged country by aggression against their weaker neighbours in the plains and the

exaction of blackmail, not only from strangers who traversed the passes through their hills, but also from powerful rulers in Afghanistan and in India. Elphinstone's "History of India" shows that so long as 200 years ago they had already firmly established the high "nuisance value" which they have been able to exploit to such good effect in more recent times against ourselves and the rulers of Afghanistan, and that even at that period they were in receipt of subsidies from the Moghal rulers of India. To supplement these resources there is evidence of Pathan enterprise from many quarters of India itself during the troublous centuries before our advent upon the scene. It can be taken for granted that our tribal warriors were well represented in the various Afghan invasions of India and that they greatly distinguished themselves when so engaged. Some of the present ruling houses of Indian States are proud to trace direct tribal ancestry and the history of India teems with such names as that of Qaim Khan, Bangash, the distinguished Pathan general who, some 400 years ago, made himself virtual ruler of Bengal. Nor should it be forgotten, in appraising their capacity and enterprise, that the Pathan fraternity of tribes furnished India with three ruling Houses—those of Ghilji, Lodi and Tughaluk—which ruled at Delhi from A.D. 1288 almost uninterruptedly for some 250 years.

The Pathan tribesman has, I need hardly say, lost none of his courage and enterprise with the passing of the years. These qualities are the product of his history and environment—to which also must be attributed his ignorance and bigotry, his childish pride, treachery and greed, no less than his instinctive hospitality and abiding sense of humour, his powers of endurance and heroic bravery and the astonishing self-sacrifice and devotion of which he is capable under conditions of severe hardship. Above all these characteristics, perhaps, stands his jealous love of the freedom of the hills—freedom for which he will fight to the last, but which, impelled sometimes by hunger, sometimes by fanaticism and sometimes almost by lighthearted irresponsibility, he nevertheless places again and again in jeopardy by gratuitously provoking the wrath of the British Government. So far as his religion is concerned, he is a strict observer of the forms of Islam. This characteristic, in combination with his gullibility and sheer love of fighting for fighting's sake, renders the tribesman an easy victim to the wiles of the Faqir, or religious leader. From the XVI Century when the Roshani sect arose under Jelala and acted with such fanatical vigour that Akbar found that the government of Kabul was incompetent to offer effective resistance to them, a succession of Faqirs down to the Haji of Turangzai and the Faqir of Ipi in recent times have succeeded, by an unending series of religious risings, in keeping alive the fanatical fervour of the tribesmen and their conventional hatred of the unbeliever.

As regards the social structure of the tribal community, probably the most striking feature that one observes in dealing with these men is their independent and democratic outlook. Important tribal affairs are settled at *Jirgas*, or tribal meetings, at which any and every member of the tribe can claim to be present and to make his voice heard. Wealth and hereditary position undoubtedly count for much in the selection of the tribal leaders. Money speaks, of course, as it does in most other places ; but tradition and sentiment also count for much, and the son of a proved leader who has done well for the tribe, and earned its trust and respect, will usually be given every chance to succeed to his father's position of leadership. But he must himself make good if he is to retain tribal support and his actions will, from the very outset, be subject to criticism and hostility. This attitude of hard practicality is well expressed in the Pathan proverb which asserts that "if the bride herself be not beautiful, it is of no use to a man that her mother was beautiful and her grandmother was beautiful." At important *jirgas* I have seen beardless youths interrupt and shout down their grey-bearded leaders, and, on many occasions, their voices have prevailed.

As regards the tenure of land and the punishment of offences, there are systems of tribal law, based as a rule upon the Islamic law, which purport to regulate tribal conduct. In practice, however, these are more honoured in the breach than the observance ; for all practical purposes the prevailing law—if such it can be called—is that : "He will hold that has the power and he will take that can." True it is that the Mullahs sometimes succeed in exercising a wholesome restraint and even in calling individuals to account for offences against the Islamic law. True, also, that tribal opinion sometimes revolts against the perpetrator of some crime of unusual brutality and unites the people for mass action against the offender. On the whole, however, such social equilibrium as exists is maintained more by the power of faction than by any other agency. In the result there is, when the apparently chaotic conditions are considered, very fair security of tenure and a more or less reasonable security of life and property.

TRIBAL ARMAMENTS

Every tribesman, of course, considers it to be his inalienable right to carry arms from childhood. I remember seeing, once in the Khyber, an Afridi lad of fourteen or fifteen swaggering about with a carbine over his shoulder, and being told by the late Sir Abdul Qayum that this child had wiped out nine enemies and thereby terminated the family feud. Armed, not very long ago, with swords, shields and jezails, the tribes have now achieved a most formidable armament of modern rifles.

Weapons of European manufacture were obtained before the Great War by means of regular trading caravans through Persian Baluchistan to the Persian Gulf. Later, Afghanistan was flooded with rifles, which were everywhere else a drug in the market after the War and found their way in large numbers to the tribes on both sides of the Indo-Afghan border. Later again, during the period of confusion following upon the expulsion of King Amanullah by Bacha Saqao, military posts and arsenals in Afghanistan were looted and more rifles became available at low cost. At the present time it would be no exaggeration to say that nearly every tribesman who has any possessions at all owns, and treasures above all things, one or more serviceable rifles of European or local manufacture.

I alluded just now to the power of faction among the tribesmen. There can be little doubt that their genius for faction is one of the most potent influences in Pathan life. Throughout tribal country faction permeates the family, the section and the tribe. With bitter enmity starting quite commonly between brothers, through jealousy over the division of the patrimony, it is axiomatic that all cousins are, *ipso facto*, at deadly feud. "I now know why there is no ending to this war," said a Mohmand to me in 1917; "I have just heard that the Germans are your cousins!" And apart from individual and family feuds, every section and every tribe is split by factional enmity from top to bottom. While these feuds lie dormant for months, sometimes years, at a time, they bias all tribal activity and are apt to recrudesce with great violence at very short notice. It becomes naturally the object in life of every tribal leader—of every tribesman almost—to secure allies or protectors by purchase, by intermarriage, by any wiles and devices that may offer. The condition arising from the consequent all-pervading atmosphere of enmities, intrigues and jealousy is, of course, the opportunity of the holy man. If he raises the cry of *Jehad*, of holy war against the Kafir, the recusancy of faction A is of itself quite enough to ensure the adherence of its rivals, faction B—whereupon faction A *must* swallow its pride and join, or be held up to scorn as poor and lukewarm Muslims. Hence the astonishing power wielded by the tribal priests who are, as often as not, mere intriguing seekers after secular power and all that it stands for. Themselves standing ostensibly above faction, they are often able, by skilful play on factional jealousies, to drag a contented and peacefully-disposed tribe out to another war against the unbeliever.

Fundamental conditions in the tribal hills have not changed much since our rule displaced that of the Sikhs in the Frontier Province in 1849. The hold of the Sikhs on the Trans-Indus plain was restricted and precarious, and they never had to cope with the tribal problem as

we know it. They made no serious attempt to consolidate a regular civil administration and did little more than to maintain their positions in central cantonments and in strong border posts at the mouths of the passes, such as those of Abazai, Shabkadr, Jamrud and Bara. Our own subsequent task of dominating the Province and extending a firm administration to its very borders brought us quickly into contact with the unruly men of the hills.

PROBLEMS OF TRIBAL CONTROL

Time does not admit of my attempting a detailed sketch of the evolution of the machinery that was brought gradually into use to enable us to carry out our new obligations. In the early days irregular forces raised by officers of the civil administration carried out innumerable expeditions against offending border clans. Later came the formation of the famous Punjab Frontier Force, while civil officers maintained day to day touch with the hill tribes through the agency of a Border police force with the aid of leading Khans of the Province, who had gained experience of these duties through generations of service under the Sikh and Afghan rulers of Peshawar and who were often connected by marriage or other ties with the tribesmen on their borders. Tribal offences were disposed of by summoning the tribal *jirga* and the imposition of fines, which were duly paid unless the tribal attitude was deliberately recalcitrant, in which case the account usually piled up till military action could no longer be avoided. Then followed the advance of our columns into the fastnesses of the offending tribe, the infliction of punishment, the enforcement of formal acknowledgment of obligations and the resumption of normal relations. Tribal memory, however, is inclined to be short, and, far too often, under the impulse of hunger or fanaticism the wheel was soon set spinning again by the commission of a fresh series of offences and the opening of a new account.

Thus was evolved the system of tribal control that came to be known as that of "burn and scuttle"—control, that is to say, by punitive invasion of the country of the offending tribe, followed by complete withdrawal after the imposition of peace terms, and the careful avoidance of any kind of permanent commitment across the border. This system was adhered to, almost without interruption, till 1921, when Waziristan was occupied by our troops—of which more later. True, the Kurram Valley, the Tochi Valley and Wana were entered and occupied by us in the 'Nineties; but this was done at the express request of the local tribes concerned, who lived under threat of expropriation or extermination by stronger tribes and were therefore anxious for our protection. Through these years the basic principle was adhered to, and our task

took shape and crystallized into that of border defence pure and simple, with careful avoidance of permanent entanglements beyond the administrative border line.

The picture, then, shows us governing, and attempting to civilize and educate the unruly Pathan peoples of the Trans-Indus plain, whom we had, of course, disarmed, and for whose safety also we were therefore responsible. To the North and West of the Province a virile, hungry and restless community, knowing no law but that of expediency and considering all things expedient that were profitable, stood ever on the watch for opportunities of adventure and loot. It was easy for the hungry and adventurous to band together and raid the villages in the plain. Not only easy, but a worthy deed, to kidnap Hindus from these villages or to rob or murder a servant of the *Sirkar*. Our available forces could not watch a twentieth of the passes, so the immediate risks were small. And retribution, as experience showed, would be long delayed, for the *Sirkar* was slow to anger, and would try all possible means of settlement before resorting to war.

It might be argued that if these were our difficulties, the problem we had to face was fairly straightforward and presented no insuperable obstacles. But there were many complications which detracted from its apparent simplicity. To begin with, the marauding hill-men and our subjects in the plains were not two separate peoples of naturally hostile interests and outlook, but, in most places, one homogeneous Pathan people divided artificially into two by an arbitrarily drawn boundary separating hill from plain. Everywhere were friendship and intermarriage between them and an economic interdependence which kept them in close contact. Many of the hill tribes actually owned large areas of land within our border; many cultivated, as tenants, land owned by our subjects; others came down—like a flood—with their cattle every winter, as indeed they still do, to seek pasturage and work with our people in the plain, lived in their villages for six months in every year and shared their daily tasks and problems. There was constant trade, a perpetual going and coming between the plains and the hills. Being of the same race and sharing the same religious upbringing, scores of thousands of pilgrims from each side of the border every year visited shrines on the other side. Large numbers of Pathans, subjects of the King, honestly revered and subscribed towards the maintenance of Faqirs who were fanatically hostile to us. For these reasons we could not anywhere place full reliance on our own villagers to support our efforts to protect them. There was always, so to speak, an enemy within the camp. And of course every fugitive from the justice of our courts found easy safety and a hearty welcome among the

tribesmen nearest to his sector of the border and became a focal point of trouble. The results of these complications were that tribal offences were nearly always carried out in collusion with agents residing within our borders.

A further disturbing influence of incalculably great effect was the attitude of Afghan border officials, who everywhere encouraged the tribesmen to commit offences against us and paid large sums as subsidies to religious and other firebrands for the instigation of attacks on our borders.

It was, therefore, no straightforward problem of dealing with simple but misguided savages who, once forcibly persuaded of the error of their ways, would repent, enter into undertakings and reform their ways. It was, on the other hand, by its very nature a continuing problem—one, as it was argued from time to time by different schools of thought, incapable of solution except :—

- (a) by military occupation and disarmament of the tribal areas, or
- (b) by abandonment of the Frontier Province and retreat to the Indus, or
- (c) by withdrawal of the "fingers" we had insinuated, so to speak, into tribal country in Swat, the Kurram, the Tochi and Wana—the elimination, in fact, of all irritants from tribal country, and by concentration on the improvement of our own communications and defences along the edge of the plain.

Controversy on these alternatives continued till 1921, when important decisions were made in connection with the campaign that year in South Waziristan.

CONDITIONS IN THE DERAJAT

To arrive at a proper understanding of the new developments we must recall the state of chaotic disorder to which conditions in the Derajat has been reduced by the hostile activities of the Mahsuds and Ahmadzai Wazirs. These tribes had made of the southern part of the Province a happy hunting ground in which large and well-armed gangs had, for a considerable period, carried out serious raids at the rate of three or four a day, looting, killing and kidnapping, till there was no safety for life or property within thirty or forty miles of the border. The Militia system in Waziristan had largely broken down owing to the mutiny of the trans-border elements in the two corps, and the Frontier Constabulary, whose duty was to defend the district borders against raiding gangs, had proved quite unable to cope with the situation in

spite of deeds of heroic courage and endurance under the inspiring leadership of such officers as the famous Handyside, whose name will live long on the border. So bold had become the activities of these raiders, that the Chief Commissioner of the Province, travelling on the high-road to Dera Ismael Khan, narrowly escaped capture by a gang which, reaching the road a few minutes too late to intercept his car, captured another car a short time later and led off into captivity an officer of the Provincial Civil Service and an officer of the Postal Department. It was in these conditions that Government decided that, if order and prestige were to be restored, if some assurance of security was to be won for the lives and property of the unfortunate taxpayers of the Derajat, some policy must be adopted which would be more effective and enduring in its results than that of "burn and scuttle," of punitive expedition and fine, which had been tried out intensively against these tribes and which had so clearly failed to secure peace. It was decided that, in Waziristan at any rate, we could no longer adhere to the time-honoured principle of avoiding at whatever cost all trans-border entanglement of a permanent nature. Traditional methods must give place to a new experiment.

Meanwhile affairs on the Afridi and Mohmand borders had not been going too well. There had been serious Afridi and Orakzai trouble in 1920, and, further North, it had become a regular habit of the Mohmands to make periodical demonstrations in force, or actual attacks, on our border near Shabkadr. Trans-border armament had everywhere improved, and our own enforced passivity on the Frontier, during the years of the Great War, when every available officer and man was, of course, sent to the major theatres, had increased beyond all bounds the self-confidence and aggressiveness of the tribesmen. It was obviously a pressing necessity to settle affairs in Waziristan before the problem became more acute on our northern borders.

The occupation of Waziristan by means of permanent garrisons of troops and Scouts was accordingly put into effect. Regular garrisons at Razmak and Wana were decided on, and the country was opened up gradually by a system of roads giving access to the heart of the Wazir and Mahsud hills. Side by side with these undertakings it was decided that employment must be found for the young tribesmen if they were to be kept out of mischief, and that adequate remuneration must be paid for such employment if they were not to be driven by hunger to desperation and further crime. To meet these ends strong corps of *Khassadars*, or tribal police, were raised, and to them, with the support of the Scouts, the protection of the roads was entrusted. As a further inducement to the tribesmen to turn to peaceful occupations it was ordered that

contracts at specially remunerative rates should in the first instance be offered to the locals for the construction of public works and for local supplies, and tentative allotments of funds were made for the establishment of a certain number of hospitals and schools and for experimental agricultural research.

RELATIONS WITH AFGHANISTAN

Before enquiring further into the effects of this momentous departure from tradition, it is important that reference should be made to a development of great significance in our relations with Afghanistan after the accession to the throne of King Nadir Shah. Mention has been made of the difficulties created for us by Afghan border officials who lost no opportunities of rousing our tribes against us by subsidising the Mullahs to preach *jehad* and individuals to commit offences. It was the traditional objective of such people to keep strong and prickly the hedge that separated us from Afghanistan, an objective which had hitherto received strong support, sometimes secret, sometimes undisguised, from those in high places at Kabul. The coming of Nadir Shah brought a new atmosphere. It soon became evident that an attempt was to be made by the Afghan Government to bring its relations with us into closer conformity with those normally prevailing between civilized nations. The difficulties attending such a break from the past were, of course, very great. It gave rise to misunderstanding and discontent among the border tribes—our own and those on the Afghan side of the Durand Line—who resented the drying up of important sources of income and could not understand the new policy of neighbourly relations with India. It was resented too by venal Afghan border officials, who lost influence with the tribesmen and found it difficult to abandon the bad old ways and accommodate themselves to the new. Our own tribesmen, especially those implacably hostile to us, hitherto the recipients of special favours at Kabul, found their privileges being gradually curtailed. The difficulties of the Afghan Government in carrying out their good intentions were substantial; but the policy has, on the whole, been adhered to, and has made steady, if slow, progress. As a logical outcome of the new relationship the Afghan Government now looked to us for reciprocity, especially in the matter of the proper control of our tribesmen in their relations with Afghanistan. It no longer arrogated to itself a sort of inherent right to deal direct with our tribes—a practice to which it had continually resorted in the past in spite of the strongest protests. And, so far as the direct effect on our tribes was concerned, no longer could our Mohmands sack Jelalabad, or our Wazirs and Mahsuds attack Matun, and expect to get

away with it at the cost of an easy, private, family settlement of their offence at Kabul. The significance of the altered situation lies in the change of our practical task in the Tribal Areas. From that of a mere defensive role on our internal or administrative border, that task has now changed into one involving an effective control of all our tribal areas, and it is clear that for the future we must accept practical as well as theoretical responsibility for the international good behaviour of our tribesmen.

WAZIRISTAN

We may now revert to Waziristan and attempt to appraise broadly the results of our innovations in that region. Our occupation has now lasted for some seventeen years. Since its commencement we have had two serious tribal outbreaks by Wazirs and Mahsuds—in 1930 and last year—and critics are inclined to denounce the new policy as a failure. I think that those who are closest connected with the problem feel that not only is there no cause for despair, but that, on the contrary, results have on the whole been far from unsatisfactory. For one thing, I think I should be safe in asserting that the number of serious offences that have been committed by Wazirs and Mahsuds in the Derajat during the seventeen years since our occupation started, have been less than the number of such offences in any one of the two or three years immediately preceding its inauguration. Raiding, in fact, simply has not occurred during the past seventeen years, except during the abnormal period of unrest which we have recently experienced. So far as its object of securing the lives and property of the taxpayers in the Derajat is concerned, therefore, it cannot be denied that the policy has been a great success. Moreover, during the two outbreaks of which I have spoken, at no time was more than a comparatively small fraction of our tribes in arms against us. Through both risings a large proportion of the tribes remained either friendly or neutral, and, in each case, a proportion of the elders and *Khassadars* continued to work loyally for Government. In both cases the tribes were under abnormal strain—a kind of strain to which they had not before been subjected, and which, in 1930, caused general disturbance almost throughout the border area. In 1930 the conditions in India must have appeared to them very much like those of successful revolution. The authority of Government was everywhere being set at defiance by Congress and the "Red Shirts," both of which organizations were actively engaged in an attempt to bring about a general rising of the tribes. The Afridis had flowed down into the Peshawar Valley and actually attacked Peshawar Cantonment; and the Mohmands, who had started a Red-Shirt corps of their own, had sent a force down to the border to maintain touch with Red Shirts in the

Province who were marching about in uniformed battalions, uttering seditious speeches and proclaiming independence. The marvel was that there was not a complete landslide in Waziristan, where there was, for a time, a general impression that the Sirkar had abrogated its functions and was in full retreat. I remember that, when one of our Scouts posts at the far end of the Tochi Valley was invested, the tribesmen rushed up to the doors of the post in confident expectation that the garrison would walk out and join them. I may add that they were quickly undeceived.

Similarly, in respect of the rising in North Waziristan last year, there seems to have been a similar feeling among the wild and ignorant tribesmen, already gravely stirred by the outcome of the Shahid Ganj Mosque dispute and the Islam Bibi case—in both of which cases they believed the Hindus, with Government support, to have triumphed unjustly over Islam—that the inauguration of Provincial autonomy, the holding of elections in the neighbouring Districts of the plain, and the election to the Assembly of former Red Shirt and Congress leaders were an indication of weakness on the part of the British *Raj* to the forces of disorder. Once again rumour, or propaganda—or both—were abroad, and “retreat” was believed to be the order of the day. I understand that at an early stage of the trouble last year a large number of Wazirs suddenly appeared one morning near Wana Cantonment bringing with them, not arms for an attack, but camels and ropes for the purpose of making such pickings as they could on the evacuation of the country by the Wana garrison. On hearing that there was to be no evacuation, they made awkward apologies to the political officials and dispersed sadly to their homes. Here, indeed, I think it may reasonably be argued that the policy of occupation is vindicated by the fact that only a small percentage of the tribes rose against us, that large numbers of elders and tribesmen remained loyal or neutral and that a large proportion of the *Khassadars* continued to perform their duties.

And the work of social and economic improvement has been going on steadily, if too slowly. The tribesmen have been helped year by year with hospitals and schools and in the improvement of their irrigation and agriculture. The Mahsuds have been given enlistment in the Army and irregular forces and an increasing number have been engaged in the arid but profitable work of labour and building contracts. Every year, in spite of the setback of 1930, more and more of the forbidden tribal country has been opened up by the Political Officers and Scouts in friendly relations with the tribes; more and more, it is reasonable to hope, will continue to be penetrated despite the events of the past year. Nor need we despair if further setbacks are encountered in the future.

MOHMANDS AND AFRIDIS

As regards the rest of the border, it is possible to speak of substantial progress within somewhat restricted limits. In Swat, that grand old man Sir Miangul Gul Shahzada, the grandson of the famous Akhund of Swat, whose name and shrine at Saidu are held in deep reverence throughout the border has, under pressure of the tribesmen themselves, established a totalitarian government with himself as dictator. He has built some hundreds of miles of roads and has organized schools, hospitals, post offices, a telephone system, and a regularized civil government of Swat and Buner. Similarly, the Nawab of Dir is gradually opening up his country, as circumstances permit, and the last Chitral reliefs were carried out as far as Dir by motor convoy.

The Mohmands who from 1915 had been gratuitously attacking us on the Shabkadr border on the average about once every two or three years since 1915, received a salutary shock in 1932 when, wearied by their ceaseless and apparently unreasoning aggression and impelled by the urgent request of the lower sections of the tribe who had suffered much for their loyal service to us, the Government sent troops up the Gandab Valley and drove a road up to the foot of the Nahakki Pass at its western extremity. In the announcement of peace terms to the Mohmands at the end of the campaign, the tribesmen were informed that, though Government had no desire to interfere with them or penetrate their country further, it would not hesitate, if driven to return by their own misdeeds, to enter the country again and extend the road. The construction of the Gandab road, penetrating deeply into the Mohmand hills, caused consternation in the heart of that rabid old man, the Haji of Turangzai, who thereafter did all he could to maintain the peace and save the *pardah* of his country. But in 1935 the Haji's son, Badshah Gul, in an access of egomania, seized the opportunity offered by a local disturbance in Gandab to bring down a following and attempt to destroy the road. As the result of this and of consequent attacks on our camps near Shabkadr, troops were sent up again to Gandab and carried the road some six miles further, over the Nahakki Pass into the central Mohmand plain. The threat to the security and authority of the Haji's family—the old man himself has since died—and to the inviolability of the arrogant upper Mohmand tribes is now so plain as to be a very strong deterrent against further hostile acts by their tribe. It is, however, impossible to say to what further acts of insanity Bajaur and the upper Mohmands may be led in the future by that scheming self-seeker, Badshah Gul, by appeals to their fanaticism or manipulation of their factions. When I recall that, in 1915, the Babra Mullah positively succeeded in dragging out a peaceful and contented Mohmand tribe to fight against us, merely by forbidding the holding of funeral services by

the Mullahs all over the country, I feel that we must not count too firmly upon peace on this border, and am thankful that my long-cherished scheme of a road up the Gandab is now an accomplished fact.

Turning now to the Afridis, it will be remembered that, consequent on their attack on Peshawar Cantonment in 1930, our troops occupied the Khajuri and Aka Khel plains which are just beyond the western administrative border of the Peshawar District. Troops are now permanently located in this area, which constitutes the principal winter grazing ground of the Afridis. We do not interfere with the tribe here so long as they are of good behaviour, but the threat of exclusion from these grazing grounds afforded by the presence of our troops is so potent that it should be sufficient to restrain the tribe except under conditions of quite abnormal strain. In 1933 an offer was made to this tribe which involved a new departure in border policy. It was suggested to them that, as their own economic condition was causing anxiety both to themselves and to the Government of India, and as both parties had much to gain by the promotion of friendship and co-operation, the Afridis should permit the Government to build a road into and through the heart of Tirah. In return Government would guarantee :—

- (a) To refrain from interference in the internal affairs of the tribe—that is to say, it would impose no laws or police, and exact no taxation.
- (b) To give all contracts and labour connected with the road to Afridis.
- (c) To provide a number of hospitals and schools in Tirah.
- (d) To give assistance in the improvement of irrigation and agriculture and in the general economic development of the country.
- (e) To meet a long-cherished desire of the Afridis by reopening to them enlistment in the Indian Army.

After two or three days of consideration, these very generous terms were accepted at Peshawar by, probably, the largest Afridi *jirga* that has assembled for many years, and work was soon afterwards started on the new road from Ali Masjid, half-way up the Khyber Pass, to Chora in the Bazar Valley. Once again, however, faction intervened to spoil a scheme which could not but have been invaluable to all concerned. On the assembly of a hostile gathering at Chora the construction of the road was suspended, for it was no part of our plan to carry on the work without the good will of the tribe. For the present we must console ourselves with the thought that it is something, at any rate, to have induced the Afridis to think seriously in terms of a road through their country, and to have gained keen adherents among them to a plan for

the development of Tirah by friendly co-operation with Government. It remains to be seen whether in the years to come the tribe will bring itself to accept a programme of full co-operation with Government, or whether outside influences and the more conservative elements of the Afridis are to prevail in their determination to maintain at whatever cost the isolation and stagnation from which most of the other tribes, it may be hoped, will begin before long to emerge.

GENERAL OBJECTIVES

What then are the general objectives that are being aimed at by the border policy of the Government of India?

I think that they might be summarized as being :—

Firstly : to maintain peaceful and friendly relations with all tribes without interference in their affairs greater than is necessary to enable us to implement our obligations to our own taxpayers in the Frontier Province and to Afghanistan.

Secondly : to encourage the opening up of the territories of such friendly tribes as may be prepared for it, with a view to their educational and economic development with Government's assistance. To further this aim guarantees have, as I have shown, already been offered to the Afridis. I have no doubt that similar assurances would be extended to other tribes.

Where tribal intransigence forces us to take punitive military action across the border, experience has shown that our labours will be largely wasted unless road communications are made through the area before the withdrawal of the troops. Not only do such roads in themselves afford the opportunity for, and encourage the will to, peaceful trade, but they stand as a permanent deterrent against disorder, inasmuch as they hold a threat of rapid punitive action in the event of any further hostile attack. In common with their poverty, their inaccessibility has been largely the foundation of aggression by the tribes in the past. And, as it is our responsibility to do what we can to improve their economic lot, so it is no less our right to secure to our troops, as opportunity may offer, rapid and easy access to the country of any tribe that wantonly attacks us. So far as Waziristan is concerned, we must obviously do all things possible to extend our communications and consolidate our hold. Recent operations have opened up some hitherto inaccessible valleys. There are others which are still inaccessible and which may cause some trouble in the future. Side by side with these activities we must incur expenditure—and I understand that this is now to be done on an increased scale—on vocational training and other means of local development. The prospects of improving irrigation

and agriculture are unfortunately very limited, but the Mahsuds are splendid agriculturists, and there seems no reason why vegetable and fruit culture should not be made to pay. The Mahsuds are also exceptionally intelligent and quick to learn, and I have no doubt that in course of time education will enable them to supplement their resources by commerce and service in India. Meanwhile a substantial proportion of the tribesmen are underclothed and underfed, and there is no doubt that, in whatever quarter of the border it may be, a hungry tribesman is a focus of discontent and trouble.

CONCLUSIONS

It is time now, perhaps, to take stock of the situation and ask ourselves how far we have succeeded in bringing about the pacification and orderly development of the intractable borderland. In answer to this question it must be admitted that the task is far from complete. So long as the blood of the young warrior of the hills leaps in frenzy to the beat of the drum, so long as ignorance and bigotry and faction hold him at the mercy of the religious Faqir and the politician, so long as large numbers are hungry and possess arms and irresponsible freedom to use them as they will, we must expect periodic outbreaks, and can at best look for slow progress only. But we can fairly record on the credit side that education and the keenness for it are spreading with increasing momentum ; that our heavy expenditure on roads in the Tribal Areas is inducing a gradual inclination towards peaceful pursuits and that already a considerable number of Mahsuds, Wazirs, Afridis and others have acquired a vested interest in peace by learning trades, by the purchase of motor omnibuses which ply for hire on our new roads, and by other means. It is surely of good augury that at Saidu, the very fount of the old fanatical teaching of the border hills, over 400 boys are receiving education in the biggest of all the trans-border schools ; that educated Mohmands are now serving Government as doctors and in other capacities ; that an Afridi recently held the important post of Political Agent of the Khyber, and now sits on the Public Service Commission of the Frontier Province ; that the Mahsuds are clamouring for more schools, more hospitals and more contracts ; and that the Boy Scout movement is obtaining increasing attention and support in their country. It will be our aim in the future, I have no doubt, to encourage these leanings towards the fruits of civilization by such expenditure as may be possible on the provision of schools, hospitals and training courses, and by research for the improvement of crops, cattle and sheep, and the exploitation of local resources. In combination with these activities much useful work can be done in the direction of reducing the tribal

armament by the systematic elimination of tribal feuds by the friendly intervention of Political Officers and the guaranteeing of truces by Government, a process that is welcomed and made much use of by the tribesmen. But, whatever success may be achieved on these lines, it is inevitable that for many years there will remain a strong nucleus of young men who, owning no property except their rifles, and having little therefore to lose and much to gain by disturbance, will be disposed both by circumstance and natural inclination to break out again. There is clearly no absolute panacea, no Royal road to the pacification of the border.

DISCUSSION

MAJOR-GENERAL P. NEAME : I should like to raise the question of disarmament, because in recent years military officers who have served on the Frontier have felt that the situation cannot be satisfactory so long as fighting continues to break out from time to time. The solution of the problem might be found in the gradual disarmament of the tribes. It seems impossible to envisage a wholesale disarmament, but it might be carried out section by section, as opportunity offers. I should like to hear the Lecturer's views on that and to know whether he thinks it is a feasible policy.

VICE-ADMIRAL C. V. USBORNE : I am quite ignorant about the North-West Frontier, but I should like to compare our policy there with the way in which the French have treated the mountain tribes in Morocco. In a series of campaigns, extending over about ten years, they have taken them valley by valley and tribe by tribe. They met each tribe and harried it until it surrendered, and then the tribe brought in all the rifles it possessed and laid them down at the feet of the officer taking the surrender. From that time onwards, with very few exceptions, each tribe has been absolutely peaceful. In the case of the tribes right in the South, near the River Sus, the French have handed back to the tribes a certain number of rifles, sufficient for them to protect themselves from other tribes beyond the border. I appreciate, of course, that the situation in Morocco is absolutely different from that on the North-West Frontier, but it would be very interesting if the Lecturer could give us some idea as to why the same policy would not be practicable on that Frontier.

COLONEL VAN STRAUBENZEE : I should be glad if the Lecturer could give us any information as to adverse propaganda.

LIEUTENANT-GENERAL SIR OSWALD BORRETT : How does the Lecturer differentiate between the grand old man of Swat who rules with a rod of iron and the grand old man of Delhi who stops the building of roads at the least opposition.

LIEUT.-COLONEL A. G. ARMSTRONG : The Lecturer made no mention of air power. I should like to know whether the advent of the air arm has made any difference to the situation.

THE LECTURER :

With regard to disarmament, I think I can answer General Neame's question and the question as to the analogy between Morocco and the North-West Frontier at the same time. The main difficulty is, of course, finance. When we took over Waziristan we occupied the country but we did not introduce any close administra-

tion. Even so, our expenditure when I was there amounted to something like 260 lakhs a year, and I was under continual pressure from the Government of India to reduce the expenditure below that. If that was the cost of the occupation which we put into force, one can hardly imagine what the cost would be of introducing an administration which envisaged also the disarmament of the tribes and their consequential protection. It must be remembered that if we disarmed any section of the border we should have to protect that border. Every tribesman has enemies, and protection would be impossible except at absolutely prohibitive expense. Apart from that, there is the question of the practical difficulty. I should say that there must be at the present time anything up to 10,000 or 15,000 rifles held by the inhabitants of the "disarmed" district of Peshawar. In the hills, if we attempted to disarm one particular tribe, it would still be surrounded by other tribes which were armed and had rifles to sell, and arms would seep in again as fast as we took them out. It is, therefore, an extremely difficult problem, but the root of the matter is, I should say, finance.

With regard to the question of adverse propaganda, there was a great deal of adverse propaganda in the tribal areas, chiefly from the Congress and the Red Shirts, during 1930, but during the last disturbance, last year, I did not hear of anything serious in the way of propaganda.

With regard to the difference between the grand old man of Swat and the grand old man of Delhi, I should think the main difference is that the grand old man of Swat who, as I said, is a "Dictator," has no public opinion of any kind to contend with, whereas the grand old man of Delhi has. That is not a very satisfactory answer, but I am afraid it is the best that I can give.

As to the question of air power, it is scarcely for me to talk about that, but my opinion is that the advent of the Air Force has made an enormous difference on the Frontier.

THE CHAIRMAN :

With reference to disarming the tribes, I wonder whether some people who talk about doing that know that from Swat to the Frontier in Persia is over six hundred miles and that in that area there are half a million tribesmen, mostly armed with good weapons. The imagination fails at the thought of disarming them : the expense would be enormous. We should have to take the country district by district, and then, when we had disarmed the inhabitants, we should have to protect them against the hostile tribes round them and also against the Afghans, who are unable to control their own tribes. Having been responsible for the military defence of that country, I do not think that disarmament is a practicable proposition ; it may be done gradually a long time hence.

The Lecturer spoke of the great assistance that the roads have been, not only in giving the Political Officer access to this wild country, but also in enabling the troops to get into the country when they have to restore order. For instance, on one occasion about eight or ten thousand of the Mahsuds and Wazirs went into the district of Afghanistan which Matun is the capital and proceeded to shoot up the Afghans. The King of Afghanistan did nothing himself, but said to us : "What are you going to do about this ?" and we had to put a military cordon round the district. I was up there shortly afterwards and, talking to one of the Maliks through an interpreter, I said : "Why didn't you have a fight with us the other day ? My young men would have liked it, and so would yours." He replied : "What would have been the use of fighting your men there when you showed us troops right away

up at the head of this valley that only three days before were in Hindustan, whereas a few years ago it would have taken them two months to get there ? "

The person who is chiefly responsible for the modern road building in this part of India is the Lecturer. He managed to induce the Viceroy, Lord Willingdon, to alter the whole of the policy that had been carried out with regard to the Frontier, as far as roads were concerned, year after year. We never knew what each new Viceroy and each new Secretary of State was going to do ; there was no continuous policy whatever, and the situation was hopeless both for the political and for the military officers. The Lecturer induced the Viceroy to change that vacillating policy and to adopt a forward policy once for all, building roads as and where they could be built right up to the Afghan frontier and carrying out peaceful penetration by means of those roads. The Finance Member had to find the money for this ; he had to find something like a crore in one year. I hope that future generations who have to fight on the Frontier will remember that the person who was really responsible for this policy being adopted was Colonel Griffith.

The customary votes of thanks to the Lecturer and to the Chairman were carried by acclamation.

In the early days of the conflict, the aerial transport of organized units and continued in freighters under the protection of Italian and German types of bombers, is of importance as being the first occasion when relatively large forces of infantry have been moved by air. We may visualize in the future long-distance operations carried out by troops embarked in aeroplanes; such an aerial disembarkation would bear a close resemblance to a maritime disembarkation, with which of course it might be combined. Certain Mediterranean islands, more particularly, are liable to this kind of action.

But let us return to aerial warfare in Spain. In the first place we must recognise that air operations have been much facilitated by the great number of natural landing grounds which exist in the Iberian peninsula. From the map one might suppose the contrary, but in fact it is very easy to find areas free of obstacles, and of large dimensions. Except where there are mountain ranges, the terrain stretches away in vast plateaus that are quite level or in great plains that are extremely flat.

In the valley of the Ebro, most of which I have personally explored, one could establish easily and without prior organization, dozens and dozens of aerodromes. Nothing indeed could better prove the quality of these improvised air bases than the fact that on one of them, at Tudela, two hundred and fifty Nationalist aircraft could be and were concentrated for the last offensive on Huesca. It is natural to ask why there should have been such a concentration when it would have been easy to disperse the force amongst neighbouring grounds. It seems to indicate a certain contempt for the theoretical possibilities of the Government's bombers.

THE ROLE OF AIRCRAFT IN THE SPANISH CIVIL WAR

By CAPITAINE DIDIER POULAIN, French Army Aviation Reserve.

During the great Aragon offensive, it is probable that General Franco had at his disposal between four and five hundred aircraft. The Government's strength was much less. His victory, therefore, bears out an opinion that the French General Armengaud heard at Barcelona : "The winner will be the first to have a hundred and fifty modern aeroplanes more than the other." That is a statement which may call for some qualification, but in its essentials it is one which must not be lost sight of when we are estimating the relative strengths of European forces. Closely associated with it is the question of the industrial potentialities of a country as a factor in deciding the outcome of a future war. But whereas in Spain the issue might be decided by a hundred and fifty aeroplanes, it might be a matter of two thousand, three thousand, or x aircraft when the scale of operation is greatly enlarged.

So far as the conduct of air warfare itself is concerned, it is now definitely admitted that the bomber is practically without defence against the fighter. The supremacy of the fast single-seater, so easy to manipulate in combat, is certain. The machine-gunners of the multi-seater are confronted with such difficulties that it is impossible to ensure that their fire will be really effective. Fighter pilots have remarked to me that with the methods of attack now in use they themselves run very little danger. In fact, the pursuit plane attacks *dans la trace*, that is to say, by following its enemy and machine-gunning him as much as possible in his wake. In this position, the chaser pilot is protected in his cockpit by the whole mass of his engine, and bullets rarely hit him. Of course, the aeroplane itself may be brought down ; but even so the pilot—as a rule untouched—can make use of his parachute. In Spain, however, that gives rise to rather horrible possibilities, since on many occasions aviators descending under their silken buoy have been pursued and machine-gunned down to the earth, so that finally only a corpse lands and is blown along by the wind.

Another advantage of the single-seater is that its fire is much more precise than that of the multi-seater : in fact, it is much easier to keep an aeroplane with a fixed machine gun well aimed on its object than it is to manipulate an independent machine gun, or twin machine guns subjected to more or less violent wind-pressure. In the case of the former, the precision is such that fire upon ground objects has been shown to be literally murderous. Attacks on lorry supply columns are always particularly effective ; even isolated lorries are practically certain to be knocked out when they are the object of a boldly pressed-home machine-gun fusillade. I had the opportunity, at Saragossa, of talking at length with the Spanish pilot considered as the "ace of the lorries"—a non-official title, but one which is the counterpart of "ace

of the sausages" or "ace of the planes" for which pilots competed in the Great War. In a well-organized attack on a convoy, said this pilot, one lorry out of three should be set on fire; the others will probably be held up, their drivers killed or wounded, and their engines ruined: this, he added, without counting those overturned in ditches, and the inevitable traffic jams. Evidently, that is what happened, much to the advantage of the Government forces, around Trijueque and Brihuega in the battle of Guadalajara.

The attack of minor ground objectives in a peaceful sector will, in future, be the only kind of work left for individualist pilots who prefer to operate alone.¹ To-day, aerial battle involves organized bodies manoeuvring and engaging in accordance with the rules of tactics which are progressively taking shape. The isolated aerial duel no longer exists. Generally speaking, two formations of fighters come to grips in the first phase—one protecting its bombers, the other trying to disintegrate this cover in order to turn the big aircraft from their mission. If the protecting fighters are beaten, it is all over with the multi-seaters and they will have great difficulty in regaining their bases without registering heavy losses. Their vulnerability is such that they must nearly always refuse a fight. In the case of aeroplanes *à cuve escamotable* which carry a machine-gunner, the pilot in command prefers to draw in the retractable under turret to increase the speed of flight. These conditions have led the air commanders of both camps to provide powerful protection for their bomber units. It has not been rare, and I have seen it myself, to observe the presence of thirty fighters to protect a flight for five bombers. In principle, the higher command should endeavour to give the heavy squadrons as many protecting single-seaters as the enemy can put fighters into the air at the call of his Observer Service.

This Observer Service—at any rate on the Nationalist side, which is the only one on which I have been able to make some studies—is astonishingly efficient: their specialists reckon that five minutes after the enemy has crossed the lines the squadrons of protection should be already at 1000 metres in the air. This is made possible by direct telephonic communication from the observers to a central station which, in turn, is in direct communication with the defence forces. In the case of attackers who are not immediately sighted by the defending fighters, the latter fly back until they are over their own ground, where a large mobile arrow is placed to point in the direction followed by the enemy,

¹ Recent events would appear to indicate that shipping at anchor or docked in an enemy harbour affords good targets for the "individualist pilot" unless there are proper local defences.—EDITOR.

as indicated by frequent telephonic messages. This may seem a somewhat primitive system, but it is the only one possible in the absence of wireless-telephones on the fighter-planes used in Spain. The general direction of the arrow is sufficient indication to inform the pilots of the whereabouts of the enemy.

The vulnerability of the bombers would, one would think, tend to make both sides resort to night operations. In practice, night bombardments have been very rare and then not profitable. I questioned the Italian pilots at the base of Vittoria (which is now evacuated by the air forces) on this subject : they explained to me that such operations have proved very difficult, military objectives being always invisible at night ; bombardments of a zone where there are troops have never been tried with much vigour. Besides, they say, the nights of full moon, that is to say those which are theoretically the brightest, are usually in periods of bad weather. I offer this explanation for what it is worth.

The fighter-plane is not the only mortal danger which threatens the multi-seaters : anti-aircraft artillery has shown itself to be extraordinarily efficient—quick-firing small calibres of the pom-pom type up to 2000, other ordnance up to 7000 metres and more. The German .88's, which I saw in a battery near Lerida, are particularly effective : at the beginning of the war they were served exclusively by Germans ; but it seems that this rule is now somewhat relaxed, and there are a few Spaniards in these batteries. The little pom-poms fire two hundred shots a minute ; that is to say, a battery of six of them can create a veritable barrage of twenty shells a second. If three batteries are protecting the same objective, it becomes unapproachable with a covering fire of sixty projectiles a second.

The value of anti-aircraft fire diminishes in proportion as the speed of the target increases. Speed is, moreover, the best protection against fighter-planes. For the latter it is, of course, a primary requirement, but handiness must not be lost sight of. Thus the little Fiat 32, which one meets in great numbers in Spain and which is an obsolescent model in Italy, obtains excellent results because of its flexibility in manoeuvre ; in addition, by diving steeply it can attain a great, if brief, super-speed which may enable it to catch and bring down bombers faster than itself.

The tactics which were most efficacious in the late war for the defence of multi-seaters, i.e., group formation and mutual protection by means of cross-fire, can no longer be employed because firing to a flank is now almost impossible.

One would get quite an incorrect idea of the role played by aircraft in the Spanish Civil War unless its participation in ground battles is very specially emphasized. Aircraft now fulfil the part formerly played by cavalry : they act as scouts to procure information ; in the battle itself they "charge" with machine gun and bomb as the cuirassiers and hussars of old charged with sabre and lance ; when the front is broken and the retreat has begun, they pursue the enemy and harass him, and may transform a check into a profound rout. At Guadalajara, they alone won the victory. In Mallorca, the Government forces imprudently disembarked without adequate cover from anti-aircraft artillery, and they were, almost literally, thrown into the sea by Franco's aircraft.

Aeroplanes can also act as long-range heavy artillery. In Spain, this role has been somewhat restricted and has essentially been concentrated on the front lines ; that is because the lack of guns has made it imperative that aircraft should take over their duties and make the artillery preparation for attacks. I was amazed when I saw the plan of operations against Santander at the sparsity of guns in the vital sector. "It doesn't matter," I was told ; "at the right moment we shall have all our aircraft concentrated for the bombardment." A curious thing is that this bombardment is as efficacious morally as it is lacking in precision materially. The "Iron Ring" of Bilbao, which I inspected in detail and which had been violently bombarded at the moment of assault, was intact. The concussion of the explosions had been so demoralizing that the garrison, certainly rather thin, had given way. Infantry stands up very badly to bombs in Spain—particularly to the bomb of 50 kilos, which is the standard projectile used both by the Nationalists and the Government forces. Paradoxically, the civil population stands up very well to bombardment, and stubbornly refuses to evacuate towns bombed from the air. But here one must emphasize the fact that Franco has never launched intensive bombardments on civilian populations ; there has been much outcry about the loss of life amongst non-combatants as a result of various operations, but the casualties were very small compared with what might have been attempted. They will be far more terrible in a European war.

Incendiary bombs have been a failure—they have not had anything like the effect expected ; but it must be remembered that they were of an old model and very light : they were of the Elektron type of 5 kilos, which is altogether too small and inefficient.

To summarize the lessons of the Spanish Civil War, as regards the employment of aircraft :—

- (1) Speed is of the highest importance, both for pursuit and for bombardment.
- (2) Even the best bombers have no defence against fighters save flight.
- (3) "Assault" aircraft have a primary role to play against ground forces.
- (4) The increasing precision of anti-aircraft artillery commands great respect.
- (5) The fighter multi-seaters as produced in France (notably the Potez 54's) have proved markedly inferior to other types.

Finally, and speaking generally, the utility of having aeroplanes of mixed construction (wood and canvas rather than entirely metal) has been demonstrated. Repair of the latter in the field is often very difficult. One should, in fact, aim at constructing machines that are rough and robust, rather than beautifully finished and delicate. The necessity of leaving them out at night, and the lack of proper care, have caused a great number of aircraft in Spain to be put out of commission. Retractable undercarriages in particular have not always given satisfaction.

instruments of war, but in "land" warfare aircraft "pilotless" and also "pilot-controlled" aircraft may be used, and these will be given the same protection as hostile aircraft and will not be attacked, unless they are threatening to inflict a special advantage, or damage to their own forces.

If, however, an aircraft attacks the friendly forces and causes most serious damage, it may be destroyed.

If, however, an aircraft attacks the friendly forces and causes most serious damage, it may be destroyed.

FIRE SUPPORT FROM THE AIR

By COLONEL M. EVERETT, D.S.O., p.s.c.

British Military Mission, Iraq Army.

ACCORDING to British doctrine,¹ the *main* duties for which aircraft exist in land warfare are :—

Reconnaissance.

Distant bombing.

Destruction of hostile aircraft.

Artillery observation.

Duties of *lesser* importance are :—

Provision of smoke screens.

Low flying attacks against troops on the ground.

Intercommunication.

Moves and supply by air.

Possibly, attacks by dropping troops from the air.

The R.A.F. component of an army includes bombers, fighters, and Army Co-operation aircraft. The bombers are intended for reconnaissance and for attacks against vital centres in the enemy's rear areas, and, in exceptional circumstances, against troops on the ground. The fighters are intended for the destruction of hostile aircraft in the air, and, in exceptional circumstances, for attacks against ground targets. The Army Co-operation aircraft are intended for reconnaissance and for artillery observation, and, in exceptional circumstances, for attacks against troops on the ground.

It will be noted that there are no aircraft designed and trained for the *special* purpose of attacking troops on the ground.² The object of this paper is to discuss whether that policy is correct or not, especially as it is not a policy with which all other nations are in agreement.

However much various writers in this Journal may disagree as to

¹ F.S.R., Vol. II, Sect. 8.

² We are given to understand that the design of aircraft for low flying attack is taken into consideration, and that bomber and two-seater fighter pilots are trained in this form of attack.—EDITOR.

whether "Defence Means Defeat"¹ or not, everyone is in agreement with the thesis that the attacker has a far more difficult task than has the defender. The reasons for this have been stated *ad nauseam*. The basic difficulty under which the attacker labours is that of preventing the enemy from hitting him while he is advancing over the open. If the enemy can be prevented from shooting at, or, at any rate from hitting, the bodies of the attackers, then the latter can advance. The two chief methods used to attain this state of affairs are : firstly, to kill the enemy by shooting at him with guns and small arms, especially with machine guns, or to frighten him so greatly that he dare not raise his head and fire ; or, secondly, to make the attackers' bodies proof against the fire of the defence, either by hiding them behind a screen of smoke or darkness, or behind armour plating.

These methods suffer from many very great disadvantages. Firstly, it is little use shooting at the enemy with guns or machine guns unless there is a high probability of hitting him. In the early stages of an attack this probability exists : batteries are surveyed-in, they have registered, they can observe the fall of shot. The real difficulties begin when the attackers have got so far forward that the batteries can no longer support them from their original position ; the batteries must move forward too. As a result, the fire support available in the second stage of the attack is both less in quantity, and worse in quality. Batteries moving are not firing, and when they have finished their move, observation of the fall of shot will be far more difficult than before ; and the consequent delay will enable the defenders to build up their defences again. The whole attack, therefore, comes to a standstill and has to start again after a long interval. The attackers have lost many men and have gained nothing except a small piece of probably useless ground.

Secondly, the method at present in vogue of attaining accuracy by means of observation from the air is one which will very likely fail in the next war. An observing aircraft cannot carry out its tasks unless it remains for the period of the shoot in a comparatively small part of the sky. It cannot use very great speed, and it cannot continuously perform aerobatics. In other words, it is going to become unpleasantly vulnerable not only to the large numbers of hostile fighters which will be available, but also possibly to the anti-aircraft fire of the defence. Just at the moment when, owing to the batteries having moved forward, air observation is essential, it may be unobtainable.

Thirdly, the projection of a mass of shells against the hostile defences has a most deleterious effect on the surface of the ground across which the attacker wishes to advance. It would clearly be much to his advan-

¹ See articles in the JOURNALS for February and May, 1938.

tage if the defender could be killed, or prevented from firing, by means of bullets rather than shells. This, however, cannot be done if the defender is behind cover capable of stopping a bullet ; for this purpose a hole in the ground is extremely suitable unless the bullet comes from above, in which case overhead cover is essential. It appears, therefore, that the ideal method is to try to hit the enemy with bullets fired from up in the air, if he has no cover over his head, and by explosive charges dropped on him if he has ; and to ensure that these bullets and explosive charges will strike the enemy with accuracy however near to, or far from his front line he may be.

The second method of assisting the attacker to advance is also hardly more hopeful. The armour-plating method is only of value if the defenders cannot puncture it, and there seems little inherent difficulty in the defence arranging to have sufficient anti-tank guns whose projectiles can puncture it.

Smoke undoubtedly has great possibilities, and an advance against defenders who cannot see the target stands a good chance of progressing. The chief difficulty here is to ensure that the smoke does not hinder the attacker as well as the defender. Owing to the fact that the wind is not under control, it is frequently necessary to start the smoke at a point which the attacker cannot reach in person ; this is done by throwing a smoke projector in the form of a shell or a grenade to where it is required ; obviously, the accurate siting of the smoke screen becomes more difficult the further the projector has to be thrown. The closer the attacker can go to the point where he wants the smoke to start the better. As a rule the only way in which he can possibly get there is by flying there.

COVERING FIRE FROM THE AIR

From the above arguments, it would appear that there is a possibility of being able to provide the covering fire required by the attackers by means of low-flying aircraft. If they can be employed in large enough numbers to provide the intensity of fire needed, and if they can fly low enough to provide fire of sufficient accuracy, all the above difficulties become far less.

How will the defenders prevent the aircraft of the attackers from providing this accurate and intense covering fire of bombs and machine gun bullets ? Two methods are open to them. The fighter aircraft of the defence can try to destroy the attackers' aircraft in the air ; and the ground troops of the defence can try to shoot them down by anti-aircraft fire.

Will either of these methods be particularly easy? The aircraft providing the covering fire will be able to move at great speed and will be flying very low. There will be little or no room beneath them in which the fighter aircraft of the defence can manoeuvre, and a fighter will not dare to dive down through fear of hitting the ground. Everyone who has tried to bring the sights of an A/A machine gun to bear on a target which appears close behind one's left ear and a second later has travelled a hundred and fifty yards, will appreciate that a bird which gets up at one's feet often escapes.

These aircraft will be able to fly very low and very fast direct from over their own lines without ever exposing themselves to the fire of the defence until nearly the moment when they drop their bombs and fire their machine guns. And their accuracy will depend only on the determination and skill of the pilots, not on complicated survey systems, and not on observing aircraft whose pilots, however determined and skilful, can do little to prevent hostile aircraft from destroying them.

If this method of providing intense and accurate supporting fire from the air is a practical possibility, then the trench, as known to-day, is doomed; no hole in the ground will any longer protect the defenders, and strong overhead cover will have to be provided everywhere. This will mean far more materials being supplied, and a far greater difficulty in concealing the defensive works. The problem of the attacker will be made easier, that of the defender more difficult.

So far, the difficulties of the attack have been considered, but the defender is not without his problems too. One of the chief of these is to hit the attacker when he is so far off that he cannot be reached by artillery fire, when, for example, a mechanized force is making a wide movement preparatory to striking the defence in flank or rear. To visualize such a threat as being a common occurrence in war is in accordance with orthodox teaching; and yet orthodox teaching only visualizes the use of any kind of aircraft against troops on the ground "in exceptional circumstances." But surely such action by aircraft will frequently provide the only method of interfering with the enemy's plans? This has been exemplified in Spain. The provision, therefore, of aircraft designed and trained to attack this type of target is clearly desirable.

CHARACTERISTICS REQUIRED OF ARMY CO-OPERATION AIRCRAFT

It remains briefly to consider the characteristics which these new kind of Army Co-operation aircraft should possess—for Army Co-operation aircraft they must be. All troops attacking the same tactical objective

must be under the command of one man, and all must be trained with the one object in view.¹

Firstly, they must be fast and very manoeuvrable ; they must be of the fighter type. They should, however, not be fighters, designed for combat in the air, but special aircraft designed to fire down at the ground while flying level. They, therefore, need a large battery of machine guns, all firing forwards and slightly downwards.

Secondly, they must be able to destroy hostile defensive works with overhead cover, and to destroy guns, so they must be fitted with bombs of some 100 or 200 lbs. weight, with slightly delay-action fuses.

It will be impossible to control them, or to alter their objectives once they have crossed the lines, so the provision of methods of communication can be simple.² Their radius of action could be low, and as they would depend on speed and low flying for their own protection, they would be small machines with a single pilot and no gunner.

Is an aircraft of these characteristics and capable of performing these duties obtainable ? The advantages appear so great, and the difficulties so comparatively small, that *timeo Danaos et dona ferentes* : one feels that there must be some insuperable obstacle. But is there ? Or is it the dislike of something new which prevents their introduction ?

Note.—Correspondence is invited on this subject.—EDITOR.

¹ We are given to understand that it is not considered feasible that aircraft and ground troops should be under one command in the attack on a tactical objective.—EDITOR.

² We are given to understand that the use of radio-telephony and wireless now make the control of aircraft, even after they have been launched, a simple matter.—EDITOR.

THE SUPPORT OF INFANTRY TANKS IN THE ATTACK

By MAJOR G. B. J. KELLIE, M.C., R.A.

THE object of this article is to make clear the various problems with which infantry, artillery and (I) tanks are faced in the attack, to draw attention to lessons learnt from previous study of the problems, and to suggest possible solutions ; at least it is hoped that it will stimulate discussion on this important subject.

Unlike other supporting arms in the attack the (I) tank precedes the infantry for whose support it has been provided. It has been designed primarily with a view to supporting the infantry in an attack on a prepared position by making paths through the enemy's barbed wire entanglements and neutralizing the enemy's small arms fire, including both light and medium machine guns. The supporting field artillery is available, therefore, for other tasks of which the support of the tanks should be the primary one. Although the defensive fire tasks of the hostile field artillery may be selected with a view to stopping the tanks and during the later stages of the attack, field guns may be encountered at point blank range, the small A/T gun, firing a shell of approximately two pounds, is likely to be the main weapon of defence against infantry tanks. The problem to be solved by field artillery in their support of infantry tanks, is, therefore, the destruction or neutralization of these small A/T guns, which are likely to be scattered over a wide area and in considerable depth. Being easily concealed and having had no reason to open fire prior to the advance of the tanks, their location will probably be unknown. Moreover, a considerable number may be located out of sight behind crests. There can be little chance, therefore, of the field artillery engaging these guns with a view to destruction, but it is important that their fire should be neutralized until the tanks have advanced and are able to engage them at close quarters. In addition to the A/T guns sited in the area over which the tanks are operating, the fire of those within range of either flank of the attack and beyond the objective requires neutralization also. That is to say, the area over which neutralizing fire may be required should include possible localities for A/T guns up to a distance of 1,200 to 1,500 yards on either flank of the attack as well as beyond the objective. It is suggested that, in order to

silence the medium machine guns, the leading tanks should go straight through to the objective leaving successive waves of tanks to cruise about the intervening ground prior to the arrival of the infantry. Except for the flanks of the attack and the ground beyond the objective, the fire of the supporting artillery would be required, therefore, for very much shorter periods than in the support of infantry.

With the limited amount of field artillery likely to be available, it would appear unlikely that the neutralization of the fire of A/T guns spread over a vast area could be adequately carried out except by a lavish expenditure of smoke, full use being made of the small arms fire available to supplement the artillery fire. The following suggestions have, therefore, been considered, but for reasons stated have not proved satisfactory.

- (a) The production of an artificial fog over the whole area and its flanks with smoke shell. The objection is that in bad visibility tanks would have little chance of spotting small and carefully hidden A/T guns, whereas their own lumbering bodies would provide excellent targets for these guns.
- (b) The production of a smoke screen close to the front of the enemy position, leaving the actual area, in which the enemy is located, free from smoke.

In this case, the tanks would be at a disadvantage, as they emerged from the smoke screen against which they would be clearly silhouetted. Moreover, the wind would not always permit of the smoke screen being put down without smoke drifting over parts of the area and providing that artificial fog which is undesirable.

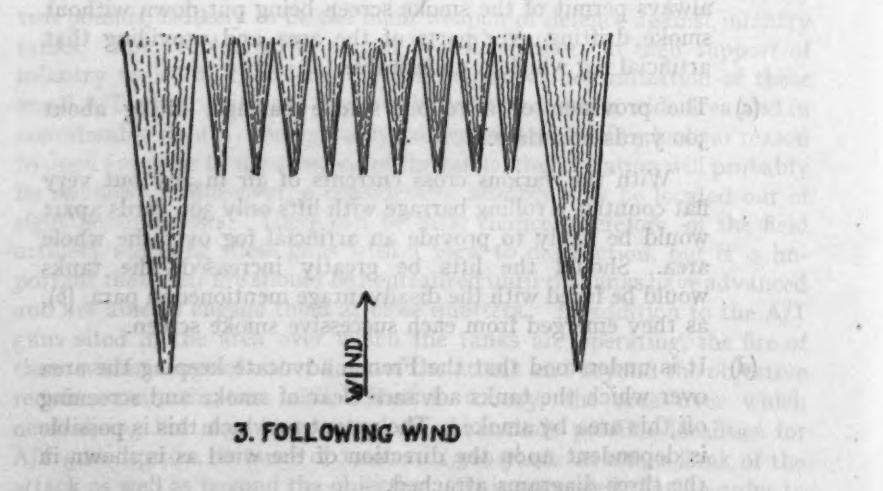
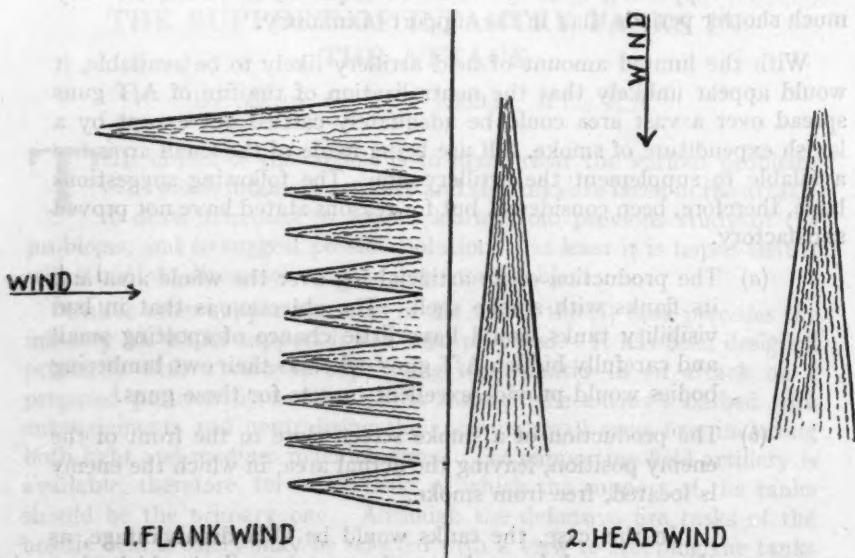
- (c) The provision of a rolling smoke barrage, lifting about 300 yards at a time.

With the various cross currents of air in any but very flat country, a rolling barrage with lifts only 300 yards apart would be likely to provide an artificial fog over the whole area. Should the lifts be greatly increased, the tanks would be faced with the disadvantage mentioned in para. (b), as they emerged from each successive smoke screen.

- (d) It is understood that the French advocate keeping the area over which the tanks advance clear of smoke and screening off this area by smoke. The extent to which this is possible is dependent upon the direction of the wind as is shown in the three diagrams attached.

SMOKE SCREENS

(N.B.—The direction of the attack is up the page in all three diagrams.)



From a study of the diagrams it will be noted that an observer would have considerable difficulty in judging the effect of a flank smoke screen when the wind is from the flank. For this reason it is suggested that unless the wind is approximately head or following, it would be safer to rely on smoke mixed with H.E. and small arms fire to neutralize the A/T guns on the flank. The advisability of using smoke to limit the area over which other forms of neutralizing fire is required, is, however, obvious. It remains to be seen whether neutralization can be effected by H.E. and small arms fire over that part of the area which cannot be dealt with by smoke.

ARTILLERY SUPPORT OF INFANTRY TANKS

As a result of the study of the various types of artillery support, which have been considered up to date, it would appear that the following principles should be observed :—

- (a) The area in which the tanks intend to operate should be kept free of smoke. The A/T weapons in this area should, therefore, be neutralized by H.E. and small arms fire.
- (b) The flanks of the attack as well as the ground beyond the objective should be screened by smoke, provided that the direction of the wind permits. If the wind is unsuitable, H.E. supplemented by small arms fire should be used to neutralize the fire of A/T guns within range of the tanks.

Having due regard to the above principles it would appear that the area over which neutralizing fire is required is so large that it may not be possible in mobile operations to concentrate sufficient guns and ammunition for this purpose. As soon as operations become static the concentration of the necessary amount of guns and ammunition is greatly simplified. It is proposed, therefore, to consider the problem under conditions of mobile warfare, when guns and ammunition are likely to be limited. Due regard should be paid to the fact that the defence will not be so highly organized as in static warfare ; possibly only one or two days may have been available for the preparation of the defence ; and it is improbable that continuous lines of barbed wire entanglements in front of successive lines of trenches will be encountered. No great concentration of hostile artillery will have been possible.

The time available for the camouflage of A/T guns sited in the open will have been limited, and for this reason guns are likely to be located mainly where natural cover exists and in folds in the ground. It should not be necessary, therefore, to spray the whole area with H.E., but the fire of the artillery should be concentrated on the various covered areas in which A/T guns may be hidden, the more open ground being left to

small arms fire and the fire of the tanks themselves to deal with. There can be no hope of neutralizing the fire of all A/T guns, but, provided that the tanks attack in sufficient numbers, the fire of those which remain immune is likely to be adversely affected by the knowledge that they have an overwhelming number of tanks to engage.

Within the limits of observation it may be possible, therefore, to provide adequate neutralization by concentrations of H.E., supplemented by small arms fire. It is when the tanks disappear over the crest that the problem becomes more difficult, and nothing except a rolling barrage or observed fire directed by forward observing officers would appear to have any chance of providing the required neutralization. It is improbable that there would be sufficient guns and ammunition to enable a barrage to be put down, unless the area was very restricted. It is suggested, therefore, that an objective should be chosen only a few hundred yards over the crest. Beyond this, support should be by observed fire.

Except with a head wind, which, as previously stated is unsuitable, it should be possible to put down an effective smoke screen beyond this objective, the effect of the screen being checked on the crest and then lifted the necessary distance beyond, this distance being measured off a large scale map or air photo. If the wind is unsuitable for smoke, a protective H.E. barrage should be put down beyond the objective. The actual support of the tanks in their advance from the crest up to the objective should be afforded by a H.E. barrage consisting of one or two lifts. This should suffice to keep the enemy's heads down as the tanks advanced over the crest. As already stated, the various concentrations and barrages may be required for a very much shorter time than those required for the support of infantry. It should be possible, therefore, to keep up a high rate of fire without expending an abnormal amount of ammunition or overheating the guns and, for this reason, more tasks could be allotted to the artillery than in the support of infantry.

Once the tanks have reached the objective the fire of all the field artillery could be concentrated on screening the area off from flanks and from the front, using H.E. where smoke could not be used, and the rate of fire could be reduced very considerably owing to the increased number of guns available for this task. Where there is more than one objective, each objective should be treated separately as suggested above until the attack has progressed out of view of the original observation posts, after which support could be afforded only by barrages for which there would be insufficient guns and ammunition, or by observed fire by observers who should accompany the tanks in armoured carriers.

To summarize :—

- (a) The flanks should be dealt with by smoke if the wind permits, otherwise by H.E. concentrations and small arms fire.
- (b) The ground beyond the objective should be screened by smoke, or, if the wind is unsuitable, by a protective H.E. barrage.
- (c) The area over which the tanks are to advance should be dealt with by H.E. concentrations and small arms fire within the limits of observation, any ground over the crest up to the objective, being dealt with by a H.E. barrage.
- (d) Should there be more than one objective, each objective should be dealt with separately as above until the attack has progressed out of view from the original observation posts. Any further advance should be supported by observed fire by observers sent forward in armoured carriers with the tanks.

THE INFANTRY PROBLEM

The success of the attack depends to a great extent on the time taken by the infantry to follow the tanks and mop up. The longer the infantry take, the more casualties the tanks are likely to suffer and the greater the opposition which both infantry and infantry tanks are likely to meet in the further advance. The object of the infantry should be, therefore, to shorten the time between the arrival of the tanks on the enemy's position and their own arrival by every means possible. The infantry might on occasions be able to start at the same time as, and to the flank of the tanks. But only under certain conditions could this course be advocated owing to the difficulty of ensuring that the tanks cut lanes through the wire in the required places and the fact that additional artillery support would most probably be required. The infantry could not start in front of or amongst the leading tanks without the risk of incurring severe casualties from the fire of the enemy's machine guns and rifles the neutralization of which is the task of the infantry tanks. Should they wait until this fire had been silenced by the tanks they would most probably suffer severe casualties from the defensive fire of the hostile artillery which is likely to be brought down about 200 yards in front of the enemy's position. This might be avoided by drawing the enemy's fire prior to the attack, noting the areas in which the defensive fire was brought down and keeping clear of those areas. But it is improbable that time could be spared for this. There could be no question of waiting until the fire ceased because the tanks would have to remain alone on the enemy position too long.

There remains but one possible remedy and that is to quicken the pace at which the infantry advance. At present it is calculated that the average pace of infantry in the attack is unlikely to be faster than 100 yards in three minutes, that is to say, approximately one mile per hour. Provided that the leading infantry travelled light, would it not be possible to increase their speed for the first few hundred yards to six miles per hour, that is to say, 200 yards in one minute? Indian troops can move at this speed for short distances over very difficult ground. Is it necessary for the infantry, whose primary task is mopping up, to carry forward any Brens and A/T rifles other than those which would be sent forward in the carriers? Infantry with rifles, supported by these carriers, should be able to deal effectively with any immediate counter attack which could be put in prior to the arrival of fully armed infantry. This slower moving infantry, having time to study the enemy's defensive fire tasks, should be able to avoid them and arrive some fifteen minutes later.

To summarize :—

- (a) Infantry armed only with rifles, bayonets and some 25 rounds of ammunition and possibly a few hand grenades should advance with the second wave of tanks, that is to say, a few hundred yards behind the leading tanks. They should be accompanied by their carriers and a proportion of 2-pdr. A/T guns if considered necessary. They should be prepared to cover the distance between their start line and the enemy's foremost troops at a speed of about 200 yards in one minute.
- (b) Fully armed infantry should follow some ten minutes behind the light infantry with the object of taking over the captured position from them.

Without the actual bullet it is difficult to judge the full effect of the solutions suggested. It would be possible, however, to try out artillery support of the type envisaged during artillery practice. Such tasks would provide good instruction to those carrying them out and much valuable information as to the probable effect of the fire would be gained. No time should be lost in experimenting with "light" infantry. For some time past, India has been experimenting with lightly armed infantry on the North West Frontier, but at home, light infantry are little more than a name. Let us hope that, in the future, all infantry will be prepared to act as light infantry when the occasion demands.

WARSHIP TYPES

A SUMMARY OF THE DESIGNS ADVOCATED BY GOLD MEDAL COMPETITORS—1937

LAST year the subject set for the Gold Medal Essay Competition was :—

“ Discuss in its widest aspects the strength and composition of the Navy at which we should aim to-day.”

Owing to the nature of the contents, official approval for the publication of the winning essay has had to be withheld.

Many of the competitors, in their treatment of the problem, described in some detail the types of warships which they considered we should build. A summary of their proposals, shown in the accompanying table, supplements the views expressed at the Discussion on “ Speed and Gun Power in Warships,” published in last quarter’s JOURNAL.

The following appears to be the trend of the opinions expressed on the various classes :—

BATTLESHPIS

It seems to be generally accepted that we must build up to the maximum tonnage agreed to at the last London Treaty, although, here and there, there is a hankering for smaller ships and more of them. The irrefutable demands for good protection and increased speed, coupled with an armament which shall not be inferior in its “ fire effect ” to those of contemporary foreign battleships are, however, the deciding factors which make a displacement of 35,000 tons inevitable unless there should be international acceptance of a lower figure, which seems highly improbable.¹

The 14-in. gun, with which the “ King George VI ” class are to be armed, is in good odour, even in competition with the approaching return to a 16-in. armament. More than one competitor recalls the satisfactory results which the Germans secured from their lighter main armaments in the War, and it is realized that by sacrificing something in inches of calibre the weight can be used to advantage elsewhere.

¹ The Essays were, of course, all written before the agreement to increase battleships’ displacement ; but the principles advocated do not seem to be materially affected.—EDITOR.

Essay No. ¹	Battleship.	Aircraft Carrier.	Cruiser.
1	35,000 tons; ten 14-in.; 28 knots. Maximum protection possible. Endurance, 5,000 miles at 15 knots.	12,000 tons; twelve 5-in.; 32 knots. Very little protection needed. Capacity, forty aeroplanes. <i>Cruiser Carrier</i> : 8,000 tons; six 6-in.; 23 knots. Well protected. Twelve aircraft.	<i>Fleet Type</i> : 8,000 tons; twelve 6-in.; 33 knots. Protection on side and against bombs. Endurance, 6,000 miles at 15 knots. <i>Commerce Protection Type</i> : 5,500 tons; eight 6-in.; 30 knots; armour.
2	25,000 tons; eight 14-in.; 26 knots.	Small and numerous.	<i>Fleet Type</i> : 3,000 tons; six 6-in.; 32 knots. To be supported by a larger class which would also serve as— <i>Commerce Protection Type</i> : 6,000 tons; eight 6-in. or 8-in.; 32 knots; armour.
3	? 35,000 tons; nine or twelve 16-in.; 25 knots.	<i>Large Type</i> : No specification. <i>Small Type</i> : To carry six aircraft. Two 4.7-in. and one multiple pom-pom.	? Displacement; six 8-in. or 6-in.; 35 knots. No torpedoes. Two aircraft.
4	35,000 tons; ? No. 14-in.; 29 knots. Armoured against 15-in. or, if necessary, 16-in. shell and 2,000-lb. bombs.	12-15,000 tons; ? No. 5.5 or 6-in.; 33 knots. Armoured against 6-in. shell and light bombs. Capacity—thirty-five aircraft.	7-8,000 tons; eight to ten 5.5 or 6-in.; 33 knots. Armoured against 6-in. shell or light bombs.
7	35,000 tons or, preferably, more ships of less tonnage. 14-in. or 13.5-in. guns, and as many as possible.	No detailed specification.	No detailed specification.
9	The smallest which can be well protected from gunfire, bomb or torpedo; armament to match foreign ships (calibre not of primary importance); 30 knots. No aircraft.	No detailed specification.	<i>Fleet Type</i> : 3-4,000 tons; four to six 6-in.; fast. (Large "Tribals.") <i>Commerce Protection Type</i> : 7,000 tons; nine 6-in.; speed; armour.
10	? tons; 14-in. guns in order to permit of better speed and protection; 30, but preferably 33 knots.	No detailed specification.	Resist any tendency to build over 10,000 tons.
12	No detailed specification.	Fast and protected to withstand cruiser and destroyer attacks.	<i>Fleet Type</i> : 5-6,000 tons; 6-in. gun. <i>Commerce Protection Type</i> : A large and as heavily armed as Treaty limits permit.
13	35,000 tons (unless other nations exceed, then perhaps 50,000). Order of importance: (1) fire-power, (2) protection, (3) speed.	15,000 tons; twelve 6-in.; ? speed (cruiser-carrier).	Cruiser fleet to be re-organized to form the mobile base for the Fleet Air Arm.
14	Slow battleships are of little use for a striking force.	No detailed specification.	No detailed specification.
15	35,000 tons; ten or twelve 14-in.; at least 30 knots. Protection the most important ingredient.	In addition to the existing 23,000-ton type, a small type of carrier with a capacity of ten to twelve aircraft is required.	<i>General Purpose Type</i> : 5-6,000 tons; ten or twelve 5-in. (G.P.); 33-35 knots. Well protected.

¹ The numbers of the Essays are merely those allotted to them in the order they were received.

Destroyer.	Other Types.	Remarks.
Existing type; also <i>Mediterranean Type</i> : 2,000 tons; eight 4.7-in.; 38 knots.	<i>Escorts</i> : 1,500 tons; eight 4-in.; 18 knots. Endurance, 10,000 miles at 10 knots.	Even though Japan should adopt 16-in. guns, we should stick to 14-in., with the better protection and speed they will permit; but if ships of greater displacement are built, we must follow suit.
<i>Gunboat Type</i> : 1,500 tons; six 4.7 or 5.1-in.; 35 knots. <i>Torpedo Type</i> : 1,000 tons; six or eight 21-in. tubes; two 4-in. or 4.7-in. guns; 35 knots.		
"Tribal" class.		
(a) 2,000 tons; ? No. 4.7-in.; 35 knots. Light torpedo armament. (b) <i>Torpedo-Boats</i> : 1,000-1,200 tons; ?No. 4.7-in.; heavy torpedo armament.	<i>Escorts</i> : 2,000-2,500 tons; ?armament: 18-20 knots. Vitals protected against 6-in. shell.	
(a) <i>Scouting Type</i> : "Fleet Gunboats" as proposed by "Navarino" in JOURNAL for August, 1936. (b) Existing type.		N.B.—This writer states that he was informed by an officer of the French "Le Terrible" that she can do 42.5 knots on routine full-power trials.
(a) <i>Large Type</i> : 2,000 tons; eight 5-in.; eight tubes. Fast (slightly larger "Tribals"). (b) <i>Torpedo Type</i> : 900 tons; four 4-in. forward, M.G. aft; eight tubes; 40 knots.		
Resist tendency to build <i>v.</i> large type.		
(a) <i>Large Type</i> : "Tribal." (b) <i>Torpedo-Boat Type</i> : Existing destroyer type.	<i>Escorts</i> : More heavily armed (5 or 6-in.) "Bittern" class.	Floating depot ship for flying boats.
2,300 tons; six 4.7-in.; ? speed.		
No detailed specification.		
<i>Fleet-Gunboat Type</i> : 2,300 tons; six or seven 5-in., or eight or ten 4.7-in.; 40 knots. <i>Torpedo-Boat Type</i> : 1,100 tons; one twin 4-in. forward and a single 4-in. aft; eight tubes; 45 knots.		

NOTE 2.—Essays Nos. 5, 6, 8, 11, 16 and 17 contain no detailed specifications for types of ships.

**VERY TIGHTLY
BOUND**

SUMMARY OF WARSHIP TYPES RECOMMENDED BY

Essay No. ¹	Battleship.	Aircraft Carrier.	Cruiser.
1	35,000 tons; ten 14-in.; 28 knots. Maximum protection possible. Endurance, 5,000 miles at 15 knots.	12,000 tons; twelve 5-in.; 32 knots. Very little protection needed. Capacity, forty aeroplanes. <i>Cruiser Carrier</i> : 8,000 tons; six 6-in.; 23 knots. Well protected. Twelve aircraft.	<i>Fleet Type</i> : 8,000 tons; twelve 6-in.; 33 knots. Protection on side and against bombs. Endurance, 6,000 miles at 15 knots. <i>Commerce Protection Type</i> : 5,500 tons; eight 6-in.; 30 knots; armour.
2	25,000 tons; eight 14-in.; 26 knots.	Small and numerous.	<i>Fleet Type</i> : 3,000 tons; six 6-in.; 32 knots. To be supported by a larger class which would also serve as— <i>Commerce Protection Type</i> : 6,000 tons; eight 6-in.; 32 knots; armour.
3	? 35,000 tons; nine or twelve 16-in.; 25 knots.	<i>Large Type</i> : No specification. <i>Small Type</i> : To carry six aircraft. Two 4.7-in. and one multiple pom-pom.	? Displacement; six 8-in. or 6-in.; 35 knots. No torpedoes. Two aircraft.
4	35,000 tons; ? No. 14-in.; 29 knots. Armoured against 15-in. or, if necessary, 16-in. shell and 2,000-lb. bombs.	12–15,000 tons; ? No. 5.5 or 6-in.; 33 knots. Armoured against 6-in. shell and light bombs. Capacity—thirty-five aircraft.	7–8,000 tons; eight to ten 5.5 or 6-in.; 33 knots. Armoured against 6-in. shell or light bombs.
7	35,000 tons or, preferably, more ships of less tonnage. 14-in. or 13.5-in. guns, and as many as possible.	No detailed specification.	No detailed specification.
9	The smallest which can be well protected from gunfire, bomb or torpedo; armament to match foreign ships (calibre not of primary importance); 30 knots. No aircraft.	No detailed specification.	<i>Fleet Type</i> : 3–4,000 tons four to six 6-in.; fast. (<i>Large "Tribals."</i>) <i>Commerce Protection Type</i> : 7,000 tons; nine 6-in.; speed; armour.
10	? tons; 14-in. guns in order to permit of better speed and protection; 30, but preferably 33 knots.	No detailed specification.	Resist any tendency to build over 10,000 tons.
12	No detailed specification.	Fast and protected to withstand cruiser and destroyer attacks.	<i>Fleet Type</i> : 5–6,000 tons 6-in. gun. <i>Commerce Protection Type</i> : A large and as heavily armed as Treaty limits permit.
13	35,000 tons (unless other nations exceed, then perhaps 50,000). Order of importance: (1) fire-power, (2) protection, (3) speed.	15,000 tons; twelve 6-in.; ? speed (cruiser-carrier).	Cruiser fleet to be re-organized to form the mobile base for the Fleet Air Arm.
14	Slow battleships are of little use for a striking force.	No detailed specification.	No detailed specification.
15	35,000 tons; ten or twelve 14-in.; at least 30 knots. Protection the most important ingredient.	In addition to the existing 23,000-ton type, a small type of carrier with a capacity of ten to twelve aircraft is required.	<i>General Purpose Type</i> : 5–6,000 tons; ten or twelve 5-in. (G.P.); 33–35 knots. Well protected.

¹ The numbers of the Essays are merely those allotted to them in the order they were received.

COMPETITORS FOR THE GOLD MEDAL ESSAY, 1937

601

Destroyer.	Other Types.	Remarks.
Existing type; also <i>Mediterranean Type</i> : 2,000 tons; eight 4.7-in.; 38 knots.	<i>Escorts</i> : 1,500 tons; eight 4-in.; 18 knots. Endurance, 10,000 miles at 10 knots.	Even though Japan should adopt 16-in. guns, we should stick to 14-in., with the better protection and speed they will permit; but if ships of greater displacement are built, we must follow suit.
<i>Gunboat Type</i> : 1,500 tons; six 4.7 or 5.1-in.; 35 knots.		
<i>Torpedo Type</i> : 1,000 tons; six or eight 21-in. tubes; two 4-in. or 4.7-in. guns; 35 knots.		
"Tribal" class. No tor.		
(a) 2,000 tons; ? No. 4.7-in.; 35 knots. Light torpedo armament. (b) <i>Torpedo-Boats</i> : 1,000-1,200 tons; ?No. 4.7-in.; heavy torpedo armament.	<i>Escorts</i> : 2,000-2,500 tons; ?armament; 18 -20 knots. Vitals pro- tected against 6-in. shell.	
(a) <i>Scouting Type</i> : "Fleet Gunboats" as proposed by "Navarino" in JOURNAL for August, 1936. (b) Existing type.		N.B.—This writer states that he was informed by an officer of the French "Le Terrible" that she can do 42.5 knots on routine full-power trials.
(a) <i>Large Type</i> : 2,000 tons; eight 5-in.; eight tubes. Fast (slightly larger "Tribals"). (b) <i>Torpedo Type</i> : 900 tons; four 4-in. for- ward, M.G. aft; eight tubes; 40 knots.		
Resist tendency to build v. large type.		
(a) <i>Large Type</i> : "Tribal." (b) <i>Torpedo-Boat Type</i> : Existing destroyer type.	<i>Escorts</i> : More heavily armed (5 or 6-in.) "Bittern" class.	Floating depot ship for flying boats.
2,500 tons; six 4.7-in.; ? speed.		
No detailed specification.		
<i>Fleet-Gunboat Type</i> : 2,300 tons; six or seven 5-in., or eight or ten 4.7-in.; 40 knots. <i>Torpedo-Boat Type</i> : 1,100 tons; one twin 4-in. forward and a single 4-in. aft; eight tubes; 45 knots.		

NOTE 2.—Essays Nos. 5, 6, 8, 11, 16 and 17 contain no detailed specifications for types of ships.

There is a very general advocacy for greater speed, but the maximum called for varies from 25 to 33 knots. Where the lower speed is accepted, the tendency is to assume that a faster enemy fleet can be hamstrung by torpedo or bombing attacks, when, with speed reduced, it can be overtaken and defeated. Those who are not so optimistic favour a speed which will enable our battleships to do their own hamstringing.

The battle-cruiser type, with its much lighter protection, finds no supporters ; indeed, apart from other considerations, the speed of future battleships puts that class out of court.

AIRCRAFT CARRIERS

There is a noticeable demand for small aircraft carriers, either in addition to or as a substitution for the existing type. In some cases a cruiser-carrier is proposed, and one competitor would have the whole of our cruiser fleet reorganized to form a mobile base for the Fleet Air Arm.

Ideas vary somewhat as to the capacity of ships of 12,000 to 15,000 tons, both in regard to the number of aircraft and the number and size of guns which could be carried. One designer would be content with ten or twelve aeroplanes, another contemplates forty together with an armament of twelve 5-in. guns and a speed of 32 knots. The nearest approach to the latter which exists at present is the U.S.N. carrier "Ranger," of 14,500 tons, which is reputed to be able to carry no less than seventy-six aircraft, is armed with eight 5-in. guns, but has a speed of only 29 knots.

The suggested floating depot ship for flying boats seems worth noting in the light of experience during the Abyssinian crisis.

CRUISERS

There seems to be a strong tendency to divide cruisers into two distinct classes : (a) the Fleet Type ; (b) the Commerce Protection Type ; and it seems to be recognized increasingly that a "general purposes" type must be an indifferent ship for both duties.

In only one case is the topsyturvy idea propounded that the Fleet cruiser should be a bigger vessel than the Commerce Protection type. Generally speaking, the trend of opinion seems to be towards a small, fast class—rather of the character of what used to be known as Light Cruisers—for fleet work, and a heavier, more robust design for ocean security functions. One view is expressed that a few of the latter should be attached to the battle fleet to stiffen the cruiser force working with it.

Aircraft in greater or less numbers appear to be generally popular as part of cruisers' equipment.

DESTROYERS

The proposal made in this Journal two years ago¹ that in future so-called destroyers should be recast in two distinct moulds, for which the names "fleet gunboats" and "fleet torpedo-boats" were suggested, has found very general favour.

It is realized that the "Tribals" are a step in this direction; but several competitors would like to see something a little larger and faster to fill the place of what is implied by the first-named category.

The design of what is essentially a modern sea-going torpedo-boat is not crystallized to the same extent: in one view the existing destroyer type is what is required; in another an altogether smaller and faster craft is necessary, the reduction in size and increased speed being secured at the expense of the gun armament. It is noticeable that France, Germany and Italy have built, and are building, a number of "small destroyers" or torpedo boats of 600 to 690 tons, while Japan has a large flotilla of similar craft. These may be intended mainly for coast-defence duties, and they may be on the small size for fleet work; on the other hand, the new motor torpedo-boat may prove to be the pioneer of a new type of very fast, small and increasingly seaworthy torpedo craft with an adequate range of action.

OTHER POINTS

In a number of cases armour to keep out shell of a certain calibre is advocated, but no mention is made of the *range* at which this is to apply. Clearly, it is impossible to design a ship which will be of any practical utility and possess armour to keep out 16-in. A.P. shell, say, at 1,000 yards. Even at long ranges a couple of thousand yards more or less in the specification can make a lot of difference in the total weight of the armour to be provided.

In general, the competition proved an interesting and popular one. It is regrettable that essential reticence makes it impossible to publish some of the views expressed on other important aspects of the subject, especially those relating to strategical considerations.

¹ See "Fleet Gunboats," by 'Navarino,' in the JOURNAL for August, 1936.

TORPEDO BOATS OR DESTROYERS

By LIEUTENANT W. J. VAN DE KASTEELE, R.N.

IN the Discussion on "Speed and Gunpower in Warships," a report of which appeared in the JOURNAL for May, Captain Altham quoted Lord Fisher's dictum that to secure victory in battle we must "hit first, hit hard, and keep on hitting." There is another maxim which is equally true; it is that to destroy the enemy we must "find him, fix him, and fight him." It is with the second of those aims that this paper is chiefly concerned.

Until our battle fleet has been very materially reconstituted, there can be little doubt that, unless steps are taken to prevent it, the option of breaking off a major naval engagement will rest with the enemy. We have only to consider some of the figures given for foreign new construction, even making allowance for the prevalent practice abroad of running trials light, to realize that the battle fleets of all the great naval Powers are appreciably faster than our own. In short, unless the enemy fleet can be "fixed," all the fire effect in the world cannot prevent him from withdrawing out of range at will.

The accepted method of "fixing" used to be the massed destroyer attack delivered in the early stages of an action and designed, not so much to cause vital damage to any particular target, as to slow up the enemy's whole force, thus enabling our own fleet to maintain the range and accomplish his final destruction by gunfire. To-day, however, a good deal is said and written about the value of torpedo-carrying aircraft, and, indeed, the launching of an air-striking force against the enemy battle fleet is a recognized move in modern tactics. But the use of aircraft depends very largely upon weather conditions, and weather conditions cannot be controlled. In effect, attack by torpedo-carrying aircraft is an alternative to destroyer attack which is sometimes, but by no means always possible; and if we are to be able to "fix" the enemy without being dependent upon the weather, a torpedo attack by surface vessels must remain a practical proposition. I would therefore suggest that the task of "fixing" the enemy battle fleet is the most important of the five functions allotted by Captain Altham to the present-day destroyer.

Except for Captain Altham's remarks, the Discussion appears to have centred chiefly around capital ships and cruisers. There is little

doubt, however, that the modern destroyer is unsuited to the work required of it. Its "main" function is still laid down as torpedo attack on the enemy battle fleet, yet the destroyer has developed in post-War years until to-day it is a general "maid of all work" to the fleet, with the result that, into a hull displacing some 1,350 tons, are crammed an A/S installation, C.S.A. smoke plant, and paravane equipment, in addition to the guns and torpedoes for which it was originally designed.

The essentials of any torpedo craft are speed, manœuvrability, and an adequate torpedo armament. In two of these respects the torpedo-carrying aircraft approaches the ideal, and the inadequacy of the single machine's torpedo armament can be overcome by flying off a number of squadrons—in itself an added advantage in that the enemy is thereby confronted with a large number of small targets. The modern "torpedo-boat," however, is rapidly becoming less handy and has gained nothing in speed from its wartime predecessor, while its increasing silhouette renders it an easier target. Present-day destroyer formations are unwieldy, and are easily broken up. The torpedo armament has, in the case of the "Tribals," been sacrificed to increased gunnery requirements. In fact, a torpedo attack by modern flotillas is liable to be both expensive and unsuccessful. It would appear, too, that the modern destroyer is developing more and more into a "gunnery" ship. Both the new "Tribal" class, mounting eight 4.7-in. guns on a displacement of 1,850 tons, and the projected "L" class which, it is understood, is to be even larger, tend to substantiate this theory. In the "Tribals," moreover, as has been already stated, the torpedo armament has been reduced (to a single mounting), and so large are these ships that it has been suggested that the division should be limited to two ships only, as being the largest convenient tactical unit. As a final argument against such ships being employed as a torpedo force for "fixing" the enemy, there is the fact that the cost of the modern destroyer, which is about £350,000, becomes prohibitive if the finished article is to be used in so expensive an operation.

It is generally argued that, without the impressive gun armament which is a feature of our modern destroyers, they would be unable to fight their way into a position suitable for attack by torpedoes. Nevertheless, it is surely in large measure the duty of the cruisers to cover the attacking flotillas on their way in; and the armament of a "Tribal," for example, must have been designed with something more in mind than to achieve a suitable position for firing only four torpedoes.

The conclusions to be drawn appear to favour a parting of the ways—a rigid division between a "gunnery" force and a "torpedo" force—as Captain Altham has suggested. This is, in fact, no new idea. It has

been apparent for some time past that the modern destroyer is being called upon to fulfil too many functions. It is thereby becoming more and more unsuited for its main function, and a reversion to torpedo-boats and super-destroyers (or, as Captain Altham calls them, "Fleet Gunboats") is the only logical outcome. For the former, I should suggest a small, handy craft of roughly a thousand tons, with a minimum speed of forty knots, two sets of mountings, and a pair of 4.7-in guns. This should be a feasible proposition, and the comparative cheapness of production should enable large numbers to be built. If speeds in excess of forty knots are considered essential, it would seem better to turn to the development of the Motor Torpedo Boats, rather than, as Captain Altham advocates, to increase displacement to 1,500 tons. With anything over a thousand tons, the increased silhouette and lack of manœuvrability is, to my mind, apt to outweigh the advantages of increased speed. The M.T.B., however, has the great disadvantage of being subject, to some extent at least, to weather conditions. In this connection, therefore, the argument against relying on aircraft for torpedo attack is equally applicable to the M.T.B., and it is considered that the small torpedo-boat is the most satisfactory answer.

Meanwhile, development along the lines of the "Tribal" destroyers would appear to be leading to a "Fleet Gunboat" type. There is certainly plenty of scope for such a vessel with the fleet—one of its most important functions being the support of a massed attack of the proposed torpedo-boats. Furthermore, it is for consideration whether such an idea is not already behind the policy of constructing such super-destroyers as the "Tribal" and later classes, since it cannot be thought that these have been built solely as a reply to similar foreign types. The French "Mogadors," to which Captain Altham referred, are faster and more powerful and, but for their lack of protection, might be officially classed as small cruisers. It is understood, however, that these were designed with a particular object in view, that of affording protection in wartime to fast troop convoys from North Africa, so that they do not altogether provide a fair comparison.

But the "Tribals" are hardly satisfactory as a purely "gunnery" force. They seem to be so-called destroyers in which the torpedo armament has been ruthlessly relegated to second place, but which still fall far short of cruiser requirements.

GENERAL GAMELIN

CHIEF OF THE FRENCH GENERAL STAFF OF NATIONAL DEFENCE

By BRIGADIER T. G. G. HEYWOOD, O.B.E.

THE geographical situation of France makes it necessary for that country to have strong land, air and sea forces ; but owing to the length and nature of her land frontiers and the character and policy of certain neighbouring nations she is compelled to regard the two former as of paramount importance. The very nature of the operations which the French fighting Services might be called upon to carry out in the event of war, would require on the one hand the close and constant co-operation of her land and air forces, and on the other the occasional co-operation of her navy with the other two.

For the first time, in 1932, the French Government appointed a single Minister as Minister of National Defence to control the Ministries of War and Marine, there being at that time no separate air force. This experiment failed owing to the overloading of the Minister, and was quickly given up. In December, 1934, the *Haut Comité Militaire* was formed. Its object was to study and co-ordinate all questions affecting the general organization of the armed forces, their employment, their armament programmes and the sub-allotment of credits. The Prime Minister himself was the Chairman of this Committee, and the three Defence Ministers, Marshal Pétain, the three Chiefs of the Staffs and the Inspector-General of Air Defence were members. The very fact that the Chairman of the Committee was the Prime Minister, who by reason of his multifarious duties was unable to devote sufficient time to its activities, made it difficult for it to accomplish much. In 1936, the Committee was reorganized as a Permanent Committee of National Defence under the Chairmanship of the Minister of War and National Defence. The object of this was to co-ordinate the three departments of War, Marine and Air. Even this was found insufficient, and in January of this year new measures were brought out which gave greatly increased powers of co-ordination and control to the Minister of National Defence, and authorized him to intervene directly in all matters affecting the three departments without diminishing the responsibilities of the Ministers concerned. His was the duty of finally approving for the three Ministries of War, Marine and Air, all measures dealing with the preparation and employment of the fighting forces, with the armament,

construction and manufacturing programmes, and with the demands for credits necessary for new constructions and equipment. To assist him in this task he is authorized to call upon the permanent Committee of National Defence, the Chiefs of the Staffs of the Army, Navy and Air, and the Secretary of the Ministry of National Defence and War. He appoints one of the three Chiefs of Staffs to be Chief of the General Staff of National Defence.

In time of peace, the Chief of the General Staff of National Defence is responsible in regard to the land and air forces for co-ordinating the strategic preparation for war and for drawing up plans of operations and mobilization. He carries out similar duties in the case of possible combined naval operations. He has the right to call meetings of the Chiefs of the Staffs whenever he may think fit. He also superintends the French National Defence College, created in 1936, somewhat on the lines of our own Imperial Defence College. In time of war he is responsible for combined operations of the land and air forces, and should the occasion arise, of combined operations with the navy.

It is difficult to say at first sight from the text of the decrees whether these measures constitute as great a step towards real unity of control of all the armed forces as was claimed when they were announced. They certainly appear to achieve complete unity of control as regards the land and air forces and in fact, therefore, restore the position to what it was before the French air force was separated from the army, in so far as the conduct of operations is concerned ; although, of course, the administration of these forces remains in the hands of their respective Ministries, it is obvious that a great deal of the success of these measures will depend on the personality of the men holding the appointments of Minister, and Chief of the General Staff of National Defence. The first incumbents of these appointments are universally recognized as men of outstanding ability and character, who may be trusted to make the most of their opportunities. The National Defence Minister is Monsieur Daladier, whilst for the highly responsible post of Chief of Staff of National Defence, the French Government have selected General Gamelin, Vice-President of the *Conseil Supérieur de la Guerre* and Chief of the General Staff of the Army.

The outstanding features of General Gamelin's career are : first, that, thanks to his remarkable capacity for work, his outstanding intelligence and ability and his capacity for clear and brief exposition at school, at the Military College at Saint Cyr, and at the Staff College, he was always in the first flight ; secondly, that although he has never been an instructor at any military college or institution, he has held a great variety of posts which have afforded him unusually wide experience in peace

and war, with troops, on the Staff, in Higher Commands, and in Missions abroad both in foreign countries and in the French Empire overseas; thirdly, he collaborated continuously with General Joffre over a long period, both in the years which immediately preceded the outbreak of the Great War and during the War itself, particularly during those critical times at the beginning of hostilities at an age when the personality of an officer is most influenced and takes a definite shape.

General Gamelin comes of an old military family—one of his ancestors was Governor of Phalsbourg under Napoleon the First, and another the Military Governor of Strasbourg. He was born on 20th September, 1872, in Paris, and was educated at that famous school, the *Collège Stanislas*, which supplied the French Army with so many of its leaders during the Great War. He worked hard, and although artistically inclined and showing promise as a painter, he followed the family tradition and entered Saint Cyr at the age of nineteen, passing out first two years later. After three years service in North Africa, he returned to France and served in the *Service Géographique de l'Armée* (Survey Department) until he went to the *Ecole de Guerre* (Staff College) in 1899, where he studied under Foch, then Professor of Tactics. After leaving the Staff College in 1901 and until the outbreak of the War, Gamelin's service, with the exception of the tours of duty with troops required by regulation, was spent in various Staff appointments. He accordingly spent two years as a company commander and two years as a battalion commander with that *Corps d'élite* of the French Army—the Chasseurs Alpins. In 1906, he first joined the Staff of General Joffre, who was then commanding the 6th Infantry Division. When Joffre took over command of a Corps, he went with him as *Chef de Cabinet* (Military Secretary), and on the outbreak of the Great War was a Major and Military Assistant to General Joffre.

THE GREAT WAR

Owing to his modesty and loyalty to his old Chief, no one will ever know the full extent of Major Gamelin's share in the great decisions taken at the beginning of the War. But Marshal Joffre, in his Memoirs, mentions that Gamelin drafted the General Instruction No. 2, the first seed from which developed the victory of the Marne. On the 28th August, 1914, he accompanied Joffre on his visit to General Lanrezac and drafted the attack orders for the battle of Guise. On the morning of 4th September, at the meeting of the officers of the 3rd Bureau, he pointed out on the 1/200000 map, the favourable situation of the Allied Armies, owing to the pronounced salient into which the German forces were gradually moving: "We must take advantage of this situation

immediately, stop the withdrawal to the Seine and attack to-morrow," he urged. Joffre, after considering his views and those of the Chief of Staff—General Berthelot, which were different, adopted Major Gamelin's general plan. The latter personally drafted that evening the famous Instruction No. 4 for the battle of the Marne.

Promoted to Lieut.-Colonel in November, 1914, he became Head of the Operations Branch at G.H.Q. in July, 1915; at the beginning of 1916 he was given command of the 2nd Brigade of Chasseurs. With this formation he was engaged in several hard and sanguinary fights on the Linge in Alsace. Subsequently his Brigade was chosen to take part in the battle of the Somme; on three occasions—in July, August and September, 1916—Colonel Gamelin led his Brigade to the attack. In the assaults on Maurepas, Curlu and at Cléry-sur-Somme he showed himself to be an outstanding commander and leader of men. Promoted to *Général de Brigade* (Major-General) in December, 1916, he was, at the age of 44, appointed Chief of the Staff to Joffre; had the latter's period of command continued, there is no doubt that General Gamelin would have gone down to history as standing in much the same relation to Joffre as General Weygand stood to Foch; with this difference, however, that Joffre had himself selected Gamelin eight years before the outbreak of war, and had trained him and worked in close collaboration with him during the period of preparation for the War, whereas Foch did not know Weygand before the outbreak of war, and it was Joffre himself who appointed Weygand to Foch's Staff when he gave the latter command of an Army just before the battle of the Marne. After the departure of Joffre, General Gamelin became Chief of the Staff of the Group of Reserve Armies. In May, 1917, he was given command of the 9th Division, with which he remained until the end of the War.

THE POST-WAR YEARS

In February, 1919, he was appointed Chief of the French Military Mission in Brazil and remained there for six years, during which he successfully reorganized the national army. By a curious coincidence, Marshal Badoglio—the future head of the Italian army and conqueror of Abyssinia, was for a large part of that time his neighbour as Italian Ambassador to Brazil, and there developed a lasting and useful friendship between these two men.

He was sent to Syria in September, 1925, as Assistant to the High Commissioner and Commander-in-Chief. The situation there was critical, since Druze unrest, encouraged by the weakness of the French local military forces, had turned into an open rising. A column commanded by General Michaud had been surprised and cut up outside

Soueida, where a French garrison was besieged by the rebels. General Gamelin's first task after his arrival was to undertake the relief of Soueida ; this he carried out successfully in ten days, after inflicting heavy casualties on the rebels ; in the meantime, however, the insurrection had spread to a large part of Syria. In December of the same year he was promoted to Lieutenant-General and Commander-in-Chief in Syria and, after a series of successful operations lasting until the beginning of 1927, he completed the pacification of the Mandated Territories.

Promoted Corps Commander in 1927, he returned to France in 1929 and took over the 20th Corps at Nancy. In January of the following year, he was appointed Deputy Chief of the Staff, and in February, 1931, he became Chief of the General Staff of the Army and a member of the *Conseil Supérieur de la Guerre*. On the 21st January, 1935, at the age of 62, he succeeded General Weygand as Vice-President of that body and Commander-in-Chief designate of the French Armies in war, retaining at the same time his appointment as Chief of the General Staff—just as Joffre had done in 1911. Finally, on the 21st January, 1938, he was appointed Chief of the General Staff of National Defence.

Owing to his long absence abroad in the years that followed the Great War, General Gamelin was, until his brilliant successes in Syria, little known in France. Since his appointment as Chief of the General Staff he has, however, gained the trust and confidence of the Army, and important reforms have taken place which have greatly increased its efficiency. Ably seconded by General Georges, he has continued General Weygand's programme of mechanization for the cavalry and motorization for the infantry ; he has introduced vast programmes of tank construction, for the provision of anti-tank weapons, for the modernization of the artillery, and for the extension of the Maginot line of frontier fortifications, not only in depth, but from Lorraine to the North Sea. Most important of all, in order to counterbalance the growing threat of Germany's rearmament, the period of military service in France was increased from one year, first to eighteen months and later to two years, thus not only considerably increasing the peace effectives, but greatly adding to their efficiency.

Since the Great War, politics have to a remarkable extent been kept out of the French Army. Owing to the frequency with which the Government has changed, General Gamelin, as head of the Army, has had to deal with many War Ministers of widely differing political creeds ; some have been more difficult than others, but thanks to his always having refused to identify himself with any political party and to his tactful yet quietly forceful manner, he has succeeded in resisting

all attempts at political interference in the army ; at the same time he has always retained the full confidence of his political chiefs. During his period of office, four major crises have occurred, each of which might well have involved France in war : the Abyssinian campaign, the re-occupation of the Rhineland by the German Army, the Civil War in Spain, and the absorption of Austria by Hitler's Third Reich. In each, General Gamelin proved himself to be a cool and wise counsellor to his Government.

The successive Governments of the Third Republic have traditionally been very averse in peace to placing too much power in the hands of a soldier (that is one of the reasons why Marshals are only appointed in war), and nothing but the realization of the growing seriousness of the international situation would have induced the Government and Legislature to create a post of such importance as that of Chief of the General Staff of National Defence. The fact that they have selected General Gamelin to fill this post is in itself both a striking proof of the confidence and trust reposed in his loyalty and patriotism, and a tribute to his personality.

THE MAN

What of the man himself ? At sixty-five, he is remarkably young both physically and mentally ; in appearance he is thickset, in height about 5 feet 8 inches—well up to the average in size for a Frenchman—with fair hair just growing grey and clear blue eyes. He has a splendid constitution which has enabled him throughout his military service in many climates to enjoy the best of health. His temperament is calm—at all times an adjunct to a soldier ; in this he closely resembles his former Chief, Marshal Joffre, who throughout his life displayed perfect self-control. Gamelin rarely sees fit to raise his voice, is ever sparing in his words, and never seeks to strengthen them by gesticulation. He has a wealth of profound commonsense, and is gifted with a simplicity not uncommon in great leaders, which is partly the outcome of wide experience, and knowledge closely akin to erudition. His recreations are painting, reading—history is his favourite subject—and travelling. He is lucid in expression, and one has only to be brought into contact with him to feel that deep respect which every man involuntarily pays towards a born leader. He has the sensibility to appreciate the points of view of other nations, and he realizes that with allies tactful persuasion may often be more constructive than direct orders. He has the gift, not only of inspiring trust in his subordinates, but of winning the affectionate devotion of those who work in close collaboration with him. This feeling is frequently shared by those foreign officers who have had

the privilege of working in co-operation with him and who have had an opportunity of appreciating his great qualities of mind and heart ; this is particularly the case with those British officers who have served with him in Syria and in France.

He has visited England and Scotland on several occasions, both official and unofficial ; in 1936, he accompanied President Lebrun and represented the French Army at King George V's funeral ; in 1937 he attended the British Army manoeuvres in East Anglia. He is a sincere admirer of the British soldier, whose staunch qualities he learned to appreciate during the Great War, particularly during those dark days of March, 1918, when British and French troops fought side by side under his orders. Although he has been the recipient of many high foreign orders, he is very proud of the C.B. which was bestowed on him by King George V in recognition of his distinguished services on that occasion. He is a confirmed believer in the strength and influence of the British Empire, and with true French logic gives his whole-hearted support to the view that as long as France and Great Britain stand firmly together and resist all attempts to undermine the Entente, there is little danger of the peace of Europe being seriously disturbed, or in the event of war, of the two remaining democratic nations of Europe failing to secure victory.

Throughout her history France has had the happy knack of producing great men to lead her in times of crisis. It would seem that she has done this once more, and that she may confidently leave the fate of her armed forces in the capable hands of her first Chief of General Staff of National Defence. It has been said of Gamelin that he was born under a lucky star, for neither during the Great War nor in his subsequent campaigns has he known defeat. Fortunate indeed is the soldier who knows but victory, and fortunate also the country which produces such a leader.

UNIFORMS, EQUIPMENTS, STANDARDS, AND COLOURS OF THE BRITISH AND INDIAN ARMIES

A MEETING of the Committee engaged in compiling a summary of Information on Uniforms, etc., was held at the Institution on 29th June, the Chairman—General Sir Robert Wigham, G.C.B., K.C.M.G., D.S.O., presiding. Two new members were elected : Mr. P. D. Clendenin, F.S.A. (Scot.)—a member of the Military Antiquarian Society and an expert on Scottish uniforms ; and Mr. J. O. Robson—a member of the British Society of Collectors of Model Soldiers, and an expert on military badges.

The Chairman announced that, as a result of circular letters sent recently to all units of the Indian Army, nearly all had expressed their wish to co-operate in the scheme, and about half had already appointed Regimental Representatives.

It was also announced that a letter had been received from The Gold Coast Regiment asking if they might be included in the scheme. The Committee welcomed the offer, and decided that the project should be brought to the notice of other Colonial regiments, and to infantry regiments of the Territorial Army which have, or have had, a long-standing independence of any Regular regiment.

THE SUMMARY OF UNIFORMS

The Summary of Uniforms is being compiled in the form of a series of type-written volumes containing classified references to all the evidence available on the subject. So far, the records of the following regiments have reached this book stage : The Life Guards, the two regiments combined into the 3rd Carabiniers, 3rd The King's Own Hussars, The Buffs, The Border Regiment (both battalions), The Hampshire Regiment (both battalions), The Welch Regiment (both battalions), The Royal Irish Fusiliers (1st battalion). In the case of other regiments and units of the British Army a great amount of material has been collected in leaflet form in readiness for assembling in their appropriate volumes. As these reach a provisional stage of completion they are sent to the respective Regimental Representative for him to check, amend, add to if possible, note and return.

The evidence on dress has to be secured from many sources. First, there are surviving specimens of clothing, badges, arms, accoutrements, etc. These are preserved in diverse places : in the Museum of the Royal United Service Institution, in the Scottish National Military and Naval Museum in Edinburgh, in Regimental Museums, in the hands of private collectors, or in private houses as relics of some ancestor. Then there are portraits—oil-paintings, drawings, miniatures, and photographs—of officers and men in their regimental uniforms ; these too are much scattered. Much evidence lies in the records preserved by regiments. Many of these have unfortunately been lost by fire and shipwreck ; but surviving Digests of Services, Regimental Orders, Standing Orders, and the like, are often profitable documents for research. Official papers preserved in the Public Record Office, the British Museum, the War Office and India Office libraries, and Dress Regulations also yield valuable evidence.

It might be thought that reference to Dress Regulations would be sufficient to cover this field of inquiry ; but such is not the case. Very much information about uniforms never appears in official publications : this applies particularly to regiments on service. Regiments adapt their clothing to the climates and other conditions they find themselves in, and many deviations from Regulations, although authorized locally, are never recorded officially. Evidence of such deviations must, therefore, be looked for in such places as photographs and drawings done on the spot, letters, diaries, memoirs of distinguished officers, and in the unwritten recollections of officers and men.

It is intended that the Summary shall contain detailed references to all these varied sources of information so that future inquiries shall be led straight to them without toilsome research. Needless to say, such an undertaking is immense, and the extent to which it can be made comprehensive must depend chiefly on the degree of co-operation it receives. At the Institution an officer is employed in recording and co-ordinating all the material which comes to hand. He is assisted by experts on the various aspects of the subject. But final success rests with individual units and especially their appointed Representatives, who it is hoped will apply themselves with enthusiasm to the search for hitherto unrecorded material.

Since the last announcement in the JOURNAL on this subject, the following additional regiments have made valuable contributions to the Summary :—

- 3rd Carabiniers (Prince of Wales's Dragoon Guards),
- The Royal Northumberland Fusiliers,
- The Hampshire Regiment,

The South Staffordshire Regiment,
 The Queen's Own Royal West Kent Regiment,
 The King's Own Yorkshire Light Infantry,
 The Royal Irish Fusiliers (Princess Victoria's),
 Royal Army Service Corps, and
 Royal Army Medical Corps.

Several public and private institutions also have rendered most useful assistance. Among these may be mentioned :—

The War Office Library,
 The Scottish National Military and Naval Museum,
 The Society for Army Historical Research, and
 The Military Antiquarian Society.

RECENT ACQUISITIONS

In the course of reorganizing the Wellcome Historical Medical Museum, the Executors of the late Sir Henry Wellcome decided to dispose of a large collection of military uniforms and other objects which the Founders had acquired. At the request of the Conservator—Mr. P. Johnson-Saint, M.A., F.R.S.E.—the Institution undertook to advise him in identifying and sorting these relics. The Marquis of Cambridge and Mr. Godfrey Brennan were good enough to volunteer to assist Captain Parker—Assistant Executive Officer—in this work.

Subsequently the Executors generously presented a number of selected articles to the Institution. These are being sorted, and any which are not required for the Institution's own collection or which would be more appropriately housed in Regimental Museums will, by desire of the Wellcome Museum authorities, be offered to the units concerned. Their gifts include some dozen coats and jackets of various periods, about forty head-dresses, and a large number of badges and articles of equipment.

The Museum is indebted to Miss Vandeleur for another very valuable set of uniform ; this is the full dress jacket and waistcoat, shabracque, sword-slings and sabretache, and pouch and pouch-belt worn by her grandfather, Lieutenant-Colonel John Vandeleur when he commanded the 10th Hussars between 1838 and 1846.

The condition of the heavy gold lacing on these articles of uniform is almost new, and it gives a good idea of the ornateness of the cavalry dress of those days.

John Vandeleur's Peninsular and Waterloo medals, won when he was a subaltern in the 71st Foot and the 12th Light Dragoons, are already on view in the Museum.

THE INTERNATIONAL SITUATION

BOMBING OF BRITISH SHIPS

IT would be interesting, but not altogether elevating, to classify the various motives which have inspired the efforts made in various quarters to make the nation's blood boil over the bombing of ships flying the Red Ensign in Spanish waters. If we attempted such an investigation, it is to be feared that amongst the motives we should find well in the van would be party politics, closely followed by mercenary opportunism. No doubt there are a lot of patriotic people who have felt righteous wrath at these insults to the British flag, and they are, not unnaturally, indignant with the authorities for not taking steps to safeguard our ships when engaged on their lawful occasions. But that familiar expression begs two questions—what manner of ships are these which are causing all the bother, and have they been on their lawful occasions when they have been bombed?

THE SHIPS¹

A certain proportion of the British ships which have been sunk or damaged while lying in Spanish Government harbours or at anchor within the three-mile limit were owned by well-established British firms who have traded with Spain for many years. As such, their moral—quite apart from any legal—right to fly the Red Ensign and be given the status and protection which that implies, is indisputable.

But there are other ships engaged in the risky but highly profitable occupation of running supplies to the belligerents, and which have the legal right to fly the British flag, but whose antecedents are not quite so irreproachable. The Prime Minister, in a debate in the House on 23rd June, quoted a Press report which mentioned a certain owner who, when the Civil War broke out, had two ships, but who now possessed twenty-three. "He started buying ships—little ships, big ships, any 'old ship, just as hard as he could go . . ." said the article. As the

¹ A more comprehensive and detailed review of ships trading under the British flag with Spanish ports will be found in the Report of Parliamentary Debates (Hansard), Vol. 336, No. 123, for Wednesday, 1st June, 1938, p. 2201.

Prime Minister remarked, there is nothing " wicked " in that. " It is a " case of a man who sees an opportunity of making profitable voyages, " subject to certain risks. . . . But . . . is it really claimed that the " country should go to war or take action which might conceivably in- " volve us in war in order to give protection to people like this, who " have gone, for purposes of making profits, into this risky trade, in " spite of the warnings of H.M. Government ?" If the question is pertinent enough as applied to this particular case, it would seem to arise in an even more acute form when we find ships claiming British nationality and privileges but owned by a company which is predominantly foreign. Even though, in a particular instance, there may be nothing the matter with the ships themselves and the whole business may be open and above board, yet there is clearly something very wrong with a system which permits the privileges and prestige of the Red Ensign to be so widely and easily available.

Admiral-of-the-Fleet Sir Roger Keyes has called attention to another important aspect of this matter in a letter to *The Times* of 30th June, which it is to be hoped will lead to a considerable tightening up of the Regulations. " We are told," he says, " that for generations it has been " the practice to allow foreigners to register their ships under the British " flag in order that they may be available for national service in the " event of war. But most of the vessels I refer to are old, ill found and " ill manned, and thoroughly unfit for service in the British Mercantile " Marine.

" In the interests of our shipowners and seamen, and the prestige of " our Merchant Navy, it is surely the duty of the Government to intro- " duce legislation to put a stop to a practice which has enabled aliens " legally to obtain British registration for worthless ships in order that " they may make vast profits out of the Spanish War under cover of the " Red Ensign and the protection of the British Navy."

THEIR LAWFUL OCCASIONS

The Under-Secretary of State for Foreign Affairs, Mr. Butler, in summing up at the end of the debate already referred to, recalled an old saying, " All things are legal, but all things are not expedient." " It may be legal," he added, " to trade in Spanish waters, but after the warnings that the Government have given to shipping companies, it is certainly not expedient to go into these ports at the present time."

The fact is the policy of non-intervention has created a somewhat novel position. Linked with it is the decision by the Powers concerned not to grant belligerent rights to either of the contesting parties. The

effect is that the safety of British shipping can be and is guaranteed on the high seas and up to the three-mile limit from the Spanish coast. But Spanish territorial waters are, in law, part of Spain, and the Navy cannot intervene to counter attacks against any objectives *within* that limit, without directly assisting one side and obstructing the other or, in other words, violating the whole principle of non-intervention. The same objection applies to any form of reprisals.

Logically, non-intervention should imply that neither side is to be succoured in any shape or form—not merely by military aid, but also by supplies of any commodities which are vital to human resistance, e.g., food. It is quite illogical to withhold arms but to let shipowners try their luck at importing fuel. The days when articles can be neatly classified as "contraband" and "non-contraband" are long since passed, in practice, if not in theory. If belligerent rights are to be denied in such circumstances as the conflict in Spain, then non-intervention should be watertight; in other words, the Powers should put a complete embargo on all trading with either of the contesting parties. This means that the Navy should be used, not only to safeguard our shipping outside the three-mile limit, but also to prevent British lives being risked in ships which are deliberately going inside that limit in violation of the declared principle of neutrality.

The alternative is to grant belligerent rights to both sides. This, of course, would favour the side with the most efficient navy, because it could then legally way-lay, examine, and, if justified, hold up ships on the high seas, regardless of nationality, which were engaged in succouring the enemy by trading to his ports.

The question of whether it is legal to bomb a merchant ship at all has never been definitely answered. The Committee of Jurists at the Hague who, in 1923, drafted Air Warfare Rules, would have applied the same restrictions to air as to submarine attacks on merchant shipping, i.e., that a vessel may not be sunk or rendered incapable of navigation without the passengers, crew, and ship's papers being first placed in a place of safety. That would obviously be impossible for an aircraft, and such a restriction would virtually render air attacks on merchant shipping illegal.¹ But the proposals of the worthy Jurists never got any further; so at present the position rests on international morality and not on international law.

In a civil war, morality is proverbially low. It behoves our merchant ships, therefore, to act on our Government's advice and avoid evil company—on either side.

¹ See the Lecture on "The Legality of Aerial Bombardment," published on p. 500 *et seq.* of this JOURNAL.

INCREASED DISPLACEMENT OF BATTLESHIPS

INTERNATIONAL AGREEMENT

IT was officially announced on 30th June, 1938, that Britain, France, and the United States had signed a protocol providing for a new limitation of 45,000 tons for the displacement of capital ships to replace the 35,000 ton limitation agreed to in the 1936 London Treaty. The maximum gun calibre, which the Treaty originally laid down as 14 in., but which could be increased to 16 in. if any Power not a party to the Treaty exceeded the lower limit, remains at the greater figure.

Protocols in similar terms have been signed by the British and German Governments, and the British and Soviet Union Governments.

This increase in the displacement of battleships has been forced on the Powers concerned by the persistence of the Japanese in refusing to be bound by the 35,000 ton limit and declining to disclose any particulars of their new capital ships. It should have been obvious to them from the first that neither Britain nor the United States would allow their main fleets to be outclassed, and now, by giving the impression that they are forcing the pace, the Japanese are merely promoting a competition which they can ill afford and which in the end, they are bound to lose.

The First Lord of the Admiralty has stated that the two British capital ships being laid down in the current year will carry 16-in. guns, but will not exceed 40,000 tons displacement. They will be the fore-runners of a new class, as the five "King George VIIs" now building, will only displace 35,000 tons and be armed with 14-in. guns.

In spite of the new agreement, France, it is announced, will keep within the original 35,000 ton limit unless another Continental Power goes beyond it.

Italy has been kept informed throughout the recent negotiations. She is not yet a party to the London Treaty or to the new protocol, but she has promised to subscribe to the Treaty when the Anglo-Italian Agreement comes into effect. Meanwhile she has not exceeded the limits for battleship displacement agreed to by the three Powers.

The United States are, it is believed, responsible for the figure—45,000 tons, this being, according to the State Department, "from a technical point of view, believed most nearly to correspond with the naval defence needs." The question of radius of action, and therefore of fuel stowage, is one which always influences American designs, which cater more particularly for a war in the Pacific.

THE SPANISH CIVIL WAR

ON LAND

GENERAL FRANCO'S troops have continued to make steady progress in Aragon, though, after their series of defeats in March, the Republican resistance temporarily stiffened. On 4th April, the Insurgents entered Lerida and the defenders withdrew to the East bank of the River Segre. This town, which has stood many sieges in history, has been described as the key to Barcelona, and its capture will do much to facilitate further operations against that city. A few days later, an insurgent detachment occupied Tremp, where the main electric power plant which serves Barcelona is located.

The Insurgent Southern Group continued its offensive along the general axis Alcaniz-Tortosa with a view to severing land communications between Barcelona and Valencia. On 9th April, heavy attacks by the Insurgents North of Tortosa were repulsed; nevertheless six days later, they reached the sea at three points, Vinaroz, Benicarlo and Alcala de Chisbert, South of Tortosa. The effect of this success was to sever land communication between Barcelona and Valencia and to split Government Spain into two halves. April 15th, 1938, will therefore rank with June 20th, 1937—the fall of Bilbao—as one of the key dates of the war.

The next day General Miaja—the Commander of Madrid, was appointed G.O.C.-in-Chief of all the forces outside Catalonia. Addressing the Valencia Corps in the sector North of Castellon, the General declared that: "Either we shall destroy the enemy or he will destroy us. Choose whether to be the flesh that is cut up or the knife that cuts it."

After the fall of Lerida, detachments from the Insurgent Northern Group marched northwards and secured the valley of Aran together with the control of the passes leading into France in that area. Here again the Insurgent objective, which is to cut off Government Spain from their friends in French territory, is perfectly clear.

On 28th April, the Republicans launched a counterstroke North of Castellon, but were repulsed with a reported loss of 2,000 men. Temporarily exhausted by the bitter nature of the fighting, and impeded by rainy weather, both sides took up a defensive attitude—modified by purely local operations—for over three weeks.

On 23rd May, however, the Republicans attacked in the Tremp sector and claimed to have cut the road between Lerida and the valley of Aran, thus isolating the Insurgent detachment at that point. But they failed to retake the Tremp power station, the loss of which has been a severe handicap to Barcelona. Republican troops launched a

further attack on 3rd June in the Balaguer sector of the Catalan front, but were repulsed.

At this time, rumours were current of unrest in Andalusia, where Germans and Italians, it is alleged, were administering insurgent territory as if it were a colony. General Quiepo de Llano—a prominent Insurgent leader, was reported to have declared that even a "Red" Spain would be better than an Italian Spain. Numerous arrests of dissatisfied officers were reported from Seville.

The Insurgent drive along the coast was rewarded on 13th June with the capture of Castellon, a sea port of considerable value to the Republicans. Large numbers of prisoners and much war material were taken. After this defeat, General Miaja, who seems to possess a gift for striking phraseology, announced that "Our mother country is once more attacked with bestial fury by the troops—or rather the hordes—of Hitler and Mussolini," and that they must resist to the last.

The Insurgents captured Bielsa in the Pyrenees where the 43rd (Republican) Division had been holding out since March, 1938. Over 7,000 of these troops were driven across the frontier into France, where they were disarmed and railed back to Government Spain.

By 23rd June, the Insurgents claimed to have secured the line Onda-Burriana about eight miles South of Castellon.

IN THE AIR¹

During the period under review, the Insurgents have maintained their superiority in the air and have intensified their policy of bombing raids against non-combatant centres of population. On 10th April, however, about 200 new aeroplanes, including both bombers and fighters, are reported to have arrived at Barcelona, from abroad, as reinforcements for the Government. Next day news reached Barcelona of a fierce air combat over the sea, in which 150 machines are believed to have taken part.

On 20th April, Insurgent aircraft bombed the Government naval base at Cartagena and claimed to have damaged five warships. With a view to supporting the attack by land, Insurgent aeroplanes raided Castellon four times on 26th April, causing much damage.

Between 5th and 13th May, the Insurgent air forces developed intense activity and repeatedly bombed Barcelona (46 killed), Castellon, and Valencia (37 killed). Government Headquarters claimed to have shot down eighteen Insurgent machines and to have captured two Italian pilots.

¹ See also "The Role of Aircraft in the Spanish Civil War," p. 581.

Insurgent air-raids were carried out between 25th and 30th May against Barcelona, Valencia, Castellon, Sargento and Alicante, over 300 persons—mostly non-combatants—being killed at Alicante alone; Valencia was raided no less than six times in twelve hours.

A heavy air raid was carried out by Insurgent aircraft on Granollers, over 200 non-combatants being killed. There was a considerable amount of adverse criticism of the Insurgent action in this case, and the British Government observer, who later visited the town, stated that the few military objectives were on the outskirts, whereas many of the bombs fell in the centre of the town.

On 9th June, General Franco's Headquarters stated that they intended to hold up all shipments of war material to Republican ports, and bombed Alicante, Denia and Castellon harbours, where foreign shipping was damaged.

The Ministry of Defence in Barcelona published details of Insurgent pilots captured since the beginning of the war, nearly two years ago. These included 63 Italians and 51 Germans; only 44 Spanish pilots had been taken prisoner.

On 25th June, Alicante was raided with loss of life, and two days later the Government port of Gandia was attacked by six aeroplanes. H.M.S. "Arethusa" was in harbour at the time embarking refugees, but was not threatened.

GERMANY AND THE BALKANS

BY the occupation of Vienna, the German Reich has secured strategical advantages the far-reaching consequences of which do not seem to have been generally appreciated in this country.

Geographically and historically, there are two main routes to the Near East from Europe, one by sea and the other by land. The control of the land route, which follows the general course of the River Danube from Linz—Vienna—Budapest—Belgrade—Ruschuk—to the Black Sea has rested, since the War, in the hands of Austria and the several Balkan States. Moreover Vienna—the ancient capital of the Austro-Hungarian Empire, forms the centre of a vast network of road and rail communications that stretch out towards Hungary and Roumania to the East, and to Yugoslavia, Albania and Bulgaria to the South-East.

In mediæval times, Vienna was the outpost of Christendom against the infidels, and was the scene of the battle in 1683—one of the decisive battles of the world—when the Christians under their famous leader John Sobieski crushed the Turkish invaders and saved Europe for all time.

It should also be remembered that the immediate cause of the Great War was the terms of the ultimatum launched from Vienna against Belgrade—the capital of Serbia.

For reasons of military geography and history, the main thrust of land forces from Europe to the Near East has always been—and must continue to be—transmitted from Vienna along the general course of the River Danube.

When Germany's army occupied Vienna on 12th March, 1938, and overthrew the government of Herr von Schuschnigg, the control of the historic land route passed into her hands; and since the control of communications and the denial of their use to the enemy constitute one of the chief objectives in war—whether by land or sea—the German Reich has—without firing a shot—taken a long step forward towards the fulfilment of her strategic ambitions in the Balkans.

ITALY

POLITICAL AND ECONOMIC DIFFICULTIES

REPORTS continue to be received of the economic strain in Italy and of growing dissatisfaction with the present regime. It is said that the army is becoming more and more anti-Fascist and pro-Monarchist, and that the Italian adventures in Spain are becoming unpopular to the more thoughtful soldiers.

The recent speech by Signor Guarneri, the Minister for Foreign Exchange, described the 1937 trade deficit of 5,500,000,000 lira as "immense" and implied that the situation calls for serious reflection and could not continue indefinitely. It appears that, while a high degree of industrial activity continues with a declining standard of living, sooner or later the Italian Government is bound to face a dearth of raw materials and an inability to finance enough orders to maintain the industrial boom.

It is reported that in the aircraft industry there is a grave and growing dissatisfaction with the Air Ministry, and that payment for aircraft delivered is seriously behindhand. The budget allotment for new material for the present financial year is believed to be already exhausted. In some cases aircraft manufacturers are being forced to borrow from the bank at a high rate of interest (8 per cent.) to meet wage bills and to purchase raw materials. It is also said that existing contracts, except in one or two cases, are almost at an end and future policy is undecided. The view has been expressed that unless action is taken in the near future to deal with these points the Italian aircraft industry is likely to suffer a slump from which it will take months to recover.

ETHIOPIA

There are continual reports of the disturbed state of Ethiopia ; the situation in the entire North-West areas is unsatisfactory, and although the Italian military position cannot be seriously threatened, the pacification and development of the country on a large scale does not appear to have made any progress for some time. Road transport is, however, coming through regularly to Addis Ababa from the North, and the Italians have no serious weather apprehensions until the big rains in June.

A certain amount of factory plant has been laid down in Addis Ababa itself, and besides improvements to the old oil factories, modern refineries have been added for the production of edible oils and a large alcohol distillery is said to have been built. The Lancia and Alfa Romeo factories are reported to have built plant and put in personnel, and Fiat and Caproni have works under construction. An explosive factory is also being built.

Nevertheless, it is said that the economic conditions show no improvement and trade remains at a standstill. Merchants retain large stocks of material which they are unable to sell.

THE SINO-JAPANESE WAR

ON LAND

THE great battle in the sixty-mile-sided equilateral railway triangle Lincheng-Taierchwang-Soochowfu, which had lasted for over two months, ended in a decided tactical success for the Japanese army. In the early stages, the course of the battle went against the Japanese troops, and on 7th April the Chinese Headquarters claimed important gains at Taierchwang, including enemy losses amounting to 7,000 killed, and 30 tanks, 77 field guns and 931 machine guns captured. The Japanese authorities, however, while not disputing the evacuation of the town, sought to minimize their casualties and stated that the Chinese had thrown in no less than thirteen divisions, with an estimated loss of 30,000 men.

On 19th April, the Japanese forces, estimated at four divisions (80,000 men) launched a counter-offensive against the Chinese Armies in Southern Shantung, reported to be about 200,000 strong. The Japanese troops included one first-line division from Manchukuo, one division from Suiyuan, and one division from Shanghai. After fierce fighting, during which the Chinese disputed every yard of ground, the Japanese recaptured Tancheng, a short distance East of Taierchwang. This village changed hands three times, but by 2nd May,

was reported to be definitely in Japanese hands. On 13th May, Japanese troops reached the Grand Canal at Hanchwang and damaged the railway West of Soochowfu. Two days later the forward elements of the Northern and Southern Japanese armies joined hands at Tangshan—a few miles West of Soochowfu. The Japanese Higher Command claimed that they had cut off the bulk of the 200,000 Chinese troops in this area and that a large-scale surrender was imminent. The Chinese authorities, however, rejected this claim and declared that the bulk of their field army was withdrawing in an orderly manner on Kweiteh, covered by rearguards.

On 22nd May, Japanese Headquarters admitted that, while they had inflicted immense casualties on the Chinese troops, the bulk of these had succeeded in withdrawing to the West. The material taken at Soochowfu included 40 locomotives, 2,000 coaches and wagons, 20,000 bombs, 550 land mines, and large stocks of shells, hand grenades, etc. The absence of Japanese claims to have captured any large amount of field artillery tends to support the Chinese assertion that the bulk of their forces withdrew in good order. The Japanese armies kept up the pressure on the Chinese rearguards and, on 28th May, captured Kweiteh, about 90 miles West of Soochowfu.

On 13th June the Chinese showed clearly the lengths to which they are prepared to go in their resistance to the foreign invader when they breached the dykes of the Yellow River between Chengchow and Kaifeng.

Prior to 1852, this mighty river used to flow eastwards from Lanyih via Soochowfu to the sea on the coast of Kiangsu. In that year, however, the river, which has an evil reputation in China and is called "The River of Sorrow," suddenly changed the last 300 miles of its course and ran North-East from Lanyih via Tsinan to the sea in the Gulf of Chihli, causing immeasurable damage and destruction.

The breaching of the dykes in the Kaifeng area has diverted the river towards its old course and has inundated wide areas of country in the zone of the Japanese Armies operating in Northern Anhwei and Kiangsu. Thousands of Chinese peasants and some hundreds of Japanese troops have been drowned, and the area of active operations has been largely submerged under the floods.

The Japanese advance on Hankow started to develop on 5th June, and detachments cut the Peking-Hankow railway at Yencheng, about 200 miles North of Hankow. Other columns captured Fengtai and Showhsien, some 180 miles North-East of Hankow. Over twenty Japanese warships sailed up the Yangtse from Wuhu and shelled various towns on the river banks. On 11th June, these vessels forced the boom across the river near Kiukiang, about 200 miles East of Hankow.

According to Chinese reports, attempts to land troops were repulsed, but, on 13th June, Japanese naval and military forces occupied Anking.

Strong Japanese reinforcements from other fronts, amounting to over 60,000 men, were reported to have passed through Shanghai for the Yangtse River-Anking line during the week ending 21st June. The Japanese landed over 5,000 men on the South bank of the Yangtse and outflanked the shore batteries protecting the boom across the river near Matung. On 27th June, the detachment broke through the defences at this point, but the Chinese claimed to have re-established their positions by a counter-attack. Very heavy fighting has continued with varying success to either side.

IN THE AIR

Air fighting and bombing have continued over wide areas, and—generally speaking—the Japanese machines have maintained their superiority over their opponents. During the long drawn out struggle in Southern Shantung, the bulk of the Japanese air forces have been fully employed in engaging targets in the zone of the Chinese defences and on the lines of communication between Kaifeng and Soochowfu. Many subsidiary operations, however, have been undertaken.

On 6th April, six bombers raided Hankow—the Chinese provisional advanced Headquarters, but were repulsed by Chinese fighters without effecting much damage. Again on 29th April, a major air combat was reported above Hankow, where 50 Japanese aircraft claimed to have shot down 51 Chinese machines with a loss to themselves of only two. The Chinese, for their part, asserted that they had destroyed eighteen enemy machines and lost only eight. A week later, the Chinese reported that they had salvaged the wrecks of twelve Japanese fighters and nine bombers and had collected 55 corpses, including that of the commander.

During April and May, the railway from Kowloon (Hongkong) to Canton and thence northwards to Shiuchow was systematically bombed by five squadrons of Japanese aircraft. The object of these operations seems to have been to interrupt the flow of munitions to the fighting areas and much damage was done to railway lines. Unfortunately, owing to inaccurate aiming and indiscriminate bombing, thousands of non-combatants, including many women and children, have been killed in Canton. The Japanese military authorities seem to be unable to appreciate the horror and disgust with which the bombing of non-combatants is regarded in civilized countries, and have declared their intention of continuing air action until the Chinese will to resist is crushed.

The Chinese treaty port of Amoy, West of the Japanese Island of Formosa, was raided by enemy aircraft on 10th May and leaflets were dropped on the foreign concession, advising the residents and shipping to leave. The military purpose of this raid is obscure, but the operation may have been intended to divert public attention in Japan from the protracted and indecisive nature of the struggle in Southern Shantung.

Canton was heavily raided from 31st May to 11th June. Railway stations and Government buildings were severely damaged and the principal power station was put out of action. Many bombs fell in the thickly crowded bazars of the city and over 3,000 non-combatants are believed to have been killed. About half a million refugees are reported to have fled either to Hongkong or to places inland.

Moved by foreign protests and by the increasing pressure of world public opinion, the Japanese Foreign Office issued a statement that Chinese casualties were due "mostly to the aimless firing of the Chinese anti-aircraft guns, which caused shrapnel to fall in all parts of the city," and then—with strange lack of logic—proceeded to justify the bombing by asserting that "Canton and its environments constitute a strongly fortified area and an important centre of Chinese military supplies."

Imperial Japanese Headquarters announced that, during May alone, naval aircraft had carried out 1,800 raids on Chinese towns. Since the war began, the Naval Air Force claimed to have shot down 469 Chinese machines and to have destroyed 505 on the ground, with a loss to itself of only 84. Oriental figures can, however, only be taken at their "face" value.

Chinese aircraft bombed Japanese war vessels near Anking on 19th June, and claimed to have sunk four. After further raids on warships and aerodromes in this area the Chinese claimed to have sunk two more gunboats and destroyed five aeroplanes. (These so-called "gun-boats" are probably armed river launches.)

On 26th June, Japanese aircraft raided Nanchang and claimed to have destroyed 35 Chinese aeroplanes, all of Russian type. The Chinese, however, allege that they shot down six of the raiders.

CORRESPONDENCE

[Correspondence is invited on subjects which have been dealt with in the JOURNAL, or which are of general interest in the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the JOURNAL.—EDITOR.]

DOES DEFENCE MEAN DEFEAT ?

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—In his article under the above title published in the May, 1938, number of the JOURNAL by way of a reply to mine in the February issue, Major Sheppard states quite correctly that my strictures on *The Times* thesis do not furnish an answer to it. My article was not designed as a contribution to a *discussion*, which on account of its amateurishness would be unworthy of a professional organ, but as a condemnation of a theory which, on account of its appearance in a great national daily, might be thought to carry the stamp of authority.

To follow Major Sheppard's arguments and counter-arguments would be like trying to stabilize a quicksand. It will be enough to examine some of his assumptions. He claims that his thesis can be assailed on two grounds only. First that the facts on which it is based are wrong and the deductions therefore faulty, and secondly that the deductions are so contrary to our national and imperial interests that we must *alter* (sic) the facts from which they have been deduced—if we can.

His "facts" are briefly that the front of the German armies in the West was never "broken through or shattered"; that similar defensive invulnerability was shown in Gallipoli, Italy, and in the earlier fighting in Palestine and Mesopotamia; that the results of Caporetto and Vittorio Veneto were due as much to economic and moral as to military causes; and that the triumphant strength of the defensive was proved over and over again in every theatre of war. Now Major Sheppard is perfectly at liberty to foster the German legend that their armies were not militarily defeated. He can even assert, if he desires, that they were actually victorious. History, however, contradicts his "facts."¹ He quotes selected instances of the triumph of the defensive, and is again equally incorrect: in Mesopotamia our *offensive* prevailed in the first place, the Turkish *counter-offensive* in the second, and our *offensive* in the third. He, strangely, makes no mention of victorious offensives conducted by inferior numbers, as in Poland, Russia and Roumania, and finds reasons other than military to account for Caporetto and Vittorio Veneto: it is indeed strange that a soldier should consider that moral reasons for victory cannot be considered as military reasons! As accordingly he has apparently employed his own latter alternative of "altering facts," neither need his immediate deductions nor his general conclusions be taken seriously. But deductions, even if correct, from the experience of twenty years ago cannot be allowed completely to dominate speculation on the future form of warfare.

¹ See "Was Germany defeated in 1918?" in the JOURNAL for May, 1938, p. 394 *et seq.*—EDITOR.

Because Major Sheppard is unable to envisage any development in warfare beyond that which he conceives to have been reached when the Great War left off, he claims that his adopted thesis is based on "facts" as they are to-day (which seemingly means as he thinks they were then) and suggests that ways and means of redressing the present balance cannot be found. The conditions of the late war, with its "indecisive and partial victories" (!) must, he argues, continue to obtain, and therefore we should make our preparations on that basis. In other words, to suit his thesis he stabilizes attacking but develops defensive power. Two decades of air development seemingly count for nothing. Yet air power played an enormous part in enabling Marshal Badoglio to effect in seven months a conquest that the world at large, and even the Italians themselves, considered would take two years at least. Air power has, perhaps, been the greatest factor in making the offensive success of General Franco possible against superior numbers, while in a small way it played the most influential role in winning a bloodless campaign for Herr Hitler in Austria by dropping a couple of battalions from the clouds into Vienna.

As to other broader issues, Major Sheppard observes that "there is no reason to suppose that France or any other ally would not prefer our assistance on the Continent to take the form of a strong air force rather than of a weak military force which is all that we should have initially available to send." This is indeed a discovery, and it would be instructive if he could produce even one French professional opinion to agree that there must be a choice. "If Germany attacks our country," wrote General Baratier in the *Temps* of 4th January, 1938, quoted in *The Army Quarterly* for April, "she will wage a totalitarian war, in the course of which France and England, in order not to succumb, will have to throw into the balance all their resources on land, sea, and in the air."

Such indeed would be the reasoned and reasonable demand of any or every ally. The alternative seems to be that we should cower behind the whole strength of other Powers and only propose to use all our own if—like a rat in a corner—we could not be defended by others. Would the world tolerate an Empire which behaved in such a manner?

R. H. BEADON,
Colonel.

21st May, 1938.

THE ACTIVE DEFENCE OF SHIPPING

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—I read with great interest the report of the Discussion on "Speed and Gun Power in Warships," published in last quarter's JOURNAL. I feel very strongly that Captain Altham's suggestion for a new type of Ocean Escort Cruiser is right. I cannot see much value in "tin pot" cruisers with no proper protection; what we need is powerfully armed cruisers to drive off raiders from our convoys.

I wish mention had been made of another type of ship which is very important, and that is what is now called an escort vessel. It seems to me that those of the type we have built up-to-date are far too small to be efficient sea-keepers, also they are so very badly armed that they are not capable of fighting even a destroyer. Why should we not build up to the limit, which I believe is 2,000 tons and make a ship capable of keeping the sea with a tramp steamer, and at the same time able to drive off a destroyer or armed merchant ship and give a certain protection to our convoy from air attack and submarines, without this excessive speed which seems to be such a craze at the present moment.

A. HENEAGE-VIVIAN,
Admiral.

INFANTRY WEAPONS**TO THE EDITOR OF THE R.U.S.I. JOURNAL.**

SIR.—There has been much interesting correspondence and many interesting articles, both in your Journal and divers other periodicals, about future forms of warfare and the use of modern weapons.

From the point of view of the infantryman, there seem to be two important conclusions on which most writers—and certainly those of the more "advanced" type—seem to agree:—

- (a) In the attack the infantryman will no longer have to fight his way on to the enemy position; rather will he be placed there by the other arms and be given the job of "mopping it up" and holding it.
- (b) In the defence—armed as he is with the Bren gun—he is on the ground really to provide local protection for his own automatic weapons and the weapons of other arms.

Indeed, in the article by Lieutenant-Colonel R. L. Sherbrooke, D.S.C., in the February issue of the JOURNAL he says: "in the War . . . rifle fire . . . was usually waste of ammunition at ranges over 300 yards."

Nevertheless, whilst everybody else is putting a layer of armour between themselves and the enemy small arms fire, the poor old infantryman remains the slow and extremely vulnerable target for the automatic weapon that he has always been.

True, he may be placed on the battlefield in a vehicle of some kind, but, in the end, he has to get on to his two feet and fight.

Might I, therefore, render the following suggestions on behalf of the poor old footslogger?

- (a) The rifle appears rapidly to be becoming an obsolete weapon except for the trained sniper. Let us first of all, therefore, eliminate it.
- (b) In its place let us give the rifleman some protection in the form of a steel shield of as light a weight as possible. No doubt such an idea will be ridiculed, but what a chance for the resurrection of heraldry in the British army!
- (c) To complete the picture, and for use in hand-to-hand fighting, let us give him a short stabbing sword, carried on the belt in a sheath.
- (d) For "mopping-up" there is no finer weapon than the hand grenade; let him, therefore, take with him a few of these into the attack.
- (e) And finally, to give him effective fire power up to the necessary range of 300 yards, he should have an automatic pistol of the German Mauser variety.

In this way may we not again see a Highland regiment dash on to the field in their vehicles and, descending, fall upon the enemy, to the skirl of the pipes, with targe and claymore, as their fathers did of old!

"P.B.I."

25th May, 1938.

TERRITORIAL TRAINING**TO THE EDITOR OF THE R.U.S.I. JOURNAL.**

SIR.—With the recent boom in Territorial recruiting, the point has arisen that a large number of potential recruits who are very keen to join up are unable to do so: I refer to those employed at holiday resorts, the camping period being at the time when they are most required at their employment.

It has been suggested that, to overcome this and to avoid losing this man-power, special units might be formed with annual camp periods, say, in June, or perhaps even earlier.

Now I see the suggestion of staggering holidays is being considered in Parliament. This will, of course, affect the whole system of annual training, and will perhaps entail even regrouping of units.

Having commanded a Territorial brigade, two of whose units commenced training a week before the others, and sometimes in different localities, I can fully appreciate the difficulties that will arise unless something of this sort is done.

F. S. THACKERY,

Ellicombe House, Minehead,

Brigadier-General.

29th April, 1938.

A LETHAL BALLOON

To THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR.—I have just read Air Commodore Hearson's lecture on Balloon Barrages in the February JOURNAL. Flight-Lieutenant Sheen asked the Lecturer a question concerning the use of explosives in a balloon for the purpose of blowing up an aeroplane. In the lecture reference is made to the incident in Salonica, in the late war, where an aeroplane was thus destroyed. Air Commodore Hearson stated that he was unaware how close the aeroplane was to the balloon at the time of the explosion. As I was present at the time and all details of the incident have remained fresh in my mind, it may be of interest if I state shortly exactly what did happen.

As Air Commodore Hearson stated, the aeroplane was very satisfactorily destroyed. The machine was a German one, and the pilot the only occupant. He dived from a good height, as he did not appear to have been spotted by the sentries, until he was nearly on the balloon. He passed on one side of the balloon, firing his machine gun, but failed to hit it; he turned about and came back on top of the balloon, and it looked as if he must hit it, he was so close. He was almost clear when the explosion took place and a wing of his machine fell off and the aeroplane circled and quickly fell to ground almost at my feet and possibly 200 yards from the balloon. An officer of the Royal Flying Corps, two men and myself arrived at the same time. I always understood that the explosive used was 500 lbs. of T.N.T., as stated by the Lecturer.

Although it is now over twenty years since the incident took place, I am quite sure of the facts, because they made a great impression on me. I still have a splinter of the German machine which I picked up at the time.

I. R. BRUCE,

At Sea off West Africa,

Lieut.-Colonel,

7th April, 1938.

The Gold Coast Regiment.

NAVY NOTES

GREAT BRITAIN

INSPECTION BY H.M. THE KING

The King inspected the Fleet at Weymouth on 21st and 22nd June. He was accompanied by H.R.H. the Duke of Kent, and embarked in the Royal Yacht "Victoria and Albert" at Weymouth on the evening of the 20th. About seventy ships were present. His Majesty gave a dinner party on board the Yacht in the evening to which Admiral Sir Charles Forbes, Commander-in-Chief, Home Fleet, and a number of the Flag and senior officers were invited.

At 9.30 next morning the King went on board H.M.S. "Nelson," in which the Royal Standard was hoisted, and led the Fleet to sea. On the way out to the firing area various exercises were carried out, including the catapulting of aircraft, torpedo attacks by destroyer flotillas, and attacks by aircraft. Firing was carried out by cruisers at radio-controlled "Queen Bee" aircraft. It had been arranged that firing practices should be carried out at H.M.S. "Centurion" in the afternoon, but owing to a low bank of fog this was not possible. The Fleet returned to its anchorage at 6.15 p.m., nearly two hours late owing to the fog. Another dinner party was given by the King to which Commodore E. L. S. King, Chief of Staff, and a number of Captains and senior officers were invited. At 9.15 the King went to H.M.S. "Courageous" for a lower-deck concert; later he attended a reception for officers in the "Nelson."

On 22nd June, the King landed to visit the Anti-Submarine School, Portland, to which he walked along a route lined by ships' companies. Later in the day he went on board and inspected various units of the fleet, and saw drills and exercises carried out.

Returning to the royal yacht about 4 p.m., His Majesty afterwards proceeded through the lines of the Fleet, and landed at Weymouth. Before leaving he sent the following message to the Commander-in-Chief and the Captain-in-Charge, Portland:—

"My short visit to the Home Fleet has afforded me the greatest pleasure, and has also been full of interest for me."

"I congratulate all ranks and ratings, both afloat and ashore, on their high standard of efficiency, and on the marked progress I can see is being made in every direction."

The King then ordered the main brace to be spliced.

THE ADMIRALTY BOARD

FIRST SEA LORD.—The King has approved the appointment of Admiral Sir Roger Backhouse, G.C.B., G.C.V.O., C.M.G., to be a Lord Commissioner of the Admiralty and Chief of Naval Staff, in succession to Admiral of the Fleet Lord Chatfield, G.C.B., K.C.M.G., C.V.O., D.C.L., to date 7th September, 1938.

On 21st January Lord Chatfield had served as First Sea Lord for five years. He continued in office for an additional period at the express wish of the Govern-

ment, conveyed by the First Lord of the Admiralty. A request for him to remain in office was similarly made two years ago by the Government of the day.

The King has also approved the appointment of Admiral Sir Roger Backhouse to be First and Principal Naval Aide-de-Camp to His Majesty, in succession to Admiral of the Fleet Lord Cork and Orrery, G.C.B., G.C.V.O., to date 1st July.

SECOND SEA LORD.—The King has approved the appointment of Admiral Sir Charles Little, K.C.B., to be a Lord Commissioner of the Admiralty and Chief of Naval Personnel in succession to Admiral Sir Martin Dunbar-Nasmith, V.C., K.C.B., to date 30th September.

FIFTH SEA LORD.—The King has approved the appointment of Vice-Admiral the Hon. Sir Alexander R. M. Ramsay, K.C.B., K.C.V.O., D.S.O., to be a Lord Commissioner of the Admiralty and Chief of Naval Air Services, in succession to Rear-Admiral John H. D. Cunningham, C.B., M.V.O., to date 19th July, 1938.

Concurrently with this change, the designation of the appointment was altered from Assistant Chief of Naval Staff (Air) to that of Fifth Sea Lord and Chief of Naval Air Services. The previous occasion when there was a Fifth Sea Lord was from 31st January, 1917, when the late Commodore Godfrey M. Paine was so appointed on taking up the post of Director of the Naval Air Service, until January, 1918, when that officer was transferred to the Air Council as Master-General of Personnel.

DEPUTY CHIEF OF NAVAL STAFF.—The King has approved the appointment of Vice-Admiral Andrew B. Cunningham, C.B., D.S.O., to be a Lord Commissioner of the Admiralty and Deputy Chief of Naval Staff, in succession to Admiral Sir William James, K.C.B., to date November, 1938.

FLAG APPOINTMENTS

PLYMOUTH COMMAND.—The King has approved the appointment of Admiral Sir Martin Dunbar-Nasmith, V.C., K.C.B., to be Commander-in-Chief, Plymouth, in succession to Admiral the Hon. Sir Reginald Plunkett-Ernle-Erle-Drax, K.C.B., D.S.O., to date 30th September, 1938.

FIRST CRUISER SQUADRON.—Rear-Admiral J. H. D. Cunningham, C.B., M.V.O., has been appointed Rear-Admiral Commanding First Cruiser Squadron, in succession to Vice-Admiral C. E. Kennedy-Purvis, C.B., to date October, 1938.

BATTLE-CRUISER SQUADRON.—Rear-Admiral Geoffrey Layton, C.B., D.S.O., has been appointed Rear-Admiral Commanding Battle Cruiser Squadron, in succession to Vice-Admiral A. B. Cunningham, C.B., D.S.O., to date 23rd July, 1938, and to assume command at Malta about 21st August.

SECOND CRUISER SQUADRON.—Rear-Admiral G. F. B. Edward-Collins, C.B., C.V.O., has been appointed Rear-Admiral Commanding Second Cruiser Squadron, in succession to Rear-Admiral T. F. P. Calvert, C.B., C.V.O., D.S.O., to date 13th June.

FIRST BATTLE SQUADRON.—The appointment of Rear-Admiral Ralph Leatham, C.B., as Rear-Admiral, First Battle Squadron, in succession to Vice-Admiral T. H. Binney, C.B., D.S.O., was dated from 14th June, and he arrived at Malta on 4th July to take up this appointment.

EAST INDIES.—On his recall to become Fifth Sea Lord, Vice-Admiral the Hon. Sir Alexander Ramsay struck his flag as Commander-in-Chief, East Indies, in H.M.S. "Norfolk" at Colombo on 27th April. From this date, Captain Allan Poland, D.S.O., was appointed Commodore Commanding East Indies Station with

the rank of Commodore, First Class, until the arrival of Vice-Admiral J. F. Somerville, C.B., D.S.O., in July. Captain G. H. Faulkner, D.S.C., commanding the "Bideford," was transferred to the "Shoreham" in command and as Senior Naval Officer, Persian Gulf, in succession to Commodore Poland, temporarily.

HOME FLEET FLOTILLAS.—Captain Tom S. V. Phillips, C.B., was appointed Commodore Commanding Destroyer Flotillas, Home Fleet, with the rank of Commodore, First Class, in succession to Rear-Admiral H. D. Pridham-Wippell, C.V.O., to date 20th April. The rank of the commanding officer on appointment in this command had formerly been that of Commodore, Second Class.

FLAG RETIREMENT AND PROMOTION

Vice-Admiral Lewis G. E. Crabbe, C.B., C.I.E., D.S.O., was placed on the retired list at his own request, to date 17th June, 1938; and in consequence Rear-Admiral George H. D'O. Lyon, C.B., was promoted to be Vice-Admiral in H.M. Fleet, to date 17th June, 1938.

SUPPLEMENTARY ESTIMATE

A Supplementary Estimate for £2,410,500 was presented on 31st May. It included £1,773,500 for the new construction programme for 1938, for which no provision was made in the Navy Estimates; £264,200 for the grant of marriage allowance to R.N. and R.M. officers; £730,800 for increased marriage allowance to naval ratings and increased pay to special service ratings; and £92,000 for the first instalment on the purchase price of the seaplane-carrier "Albatross" from the Government of Australia. Against this was set £450,000 as the first instalment of the price of the cruiser "Apollo," which is to be transferred to the Australian Government, making the net total £2,410,500.

Of the 1938 construction programme, only one submarine will be built in a public dockyard, at Chatham. The other ships will be built by contract: two battleships, seven cruisers, one aircraft carrier, two submarines, three minelayers, two river gunboats, one destroyer depot ship, one submarine depot ship, one Fleet Air Arm supply and repair ship, seven motor torpedo-boats, and a number of boom defence vessels, tugs, and miscellaneous small craft.

Including the Supplementary Estimate, the net total of Navy Estimates for 1938, after allowing for £30,000,000 provided from the Consolidated Fund, is increased from £93,707,000 to £96,117,500.

EXERCISES AND CRUISES

HOME FLEET.—The summer cruise of the Home Fleet, the first under the command of Admiral Sir Charles Forbes, began on 10th May, when most of the ships proceeded to Portland. The "Courageous" and "Wren" went to Invergordon, and left on 4th June for Oslo, which was visited from 7th to 13th June. The "Ramillies" and "Cornwall" proceeded to Invergordon and Lamlash respectively. These and other ships returned to Portland for the King's inspection. Combined exercises in the Channel, and a coast defence exercise in the North Sea, were arranged to take place in July.

MEDITERRANEAN.—The summer cruise of the Mediterranean Fleet under Admiral Sir Dudley Pound was arranged to take place in the eastern part of the Station from 28th June to 24th August. Most of the ships, except those on patrol duty in the Western Mediterranean, were to take part.

CHINA.—The flagship "Cumberland," the "Suffolk" and several other ships of the China Fleet arrived at Wei-Hai-Wei on 7th June for their usual summer visit. The "Dorsetshire" visited Australia.

AMERICA STATION.—The flagship "York," after a visit to Washington, arrived at Bermuda on 4th April, and the other ships of the squadron assembled there until starting their summer programmes in June.

The escort vessel "Scarborough" made a cruise up the Uruguay and Parana Rivers during April and May, visiting Rosario, Santa Fé, Santa Elena, Colon, Salto, Concordia, Concepcion del Uruguay, Paysandu and Fray Bentos.

UNREST IN JAMAICA

On 23rd May, the Governor of Jamaica reported that a serious situation had developed in Kingston, a general strike having been attempted. In response to a request for a cruiser, H.M.S. "Ajax," Captain C. H. L. Woodhouse, left Bermuda next day and arrived at Kingston on the 26th and found the situation somewhat quieter.

On 5th June the "Ajax" proceeded to Montego Bay, and an aeroplane was sent up from her for observation duty in the parishes of St. Anne and Trelawney, which had until then been unaffected. Bluejackets were landed on 7th June to assist the police and military to maintain order. The ship returned to Kingston next day. She left for Bermuda on 20th June.

PERSONNEL

INCREMENTS OF PAY.—Concurrently with the grant of marriage allowance to officers of the R.N. and R.M., announced in the last issue of this Journal, additional increments of pay were introduced for Lieutenant-Commanders (executive, engineering and paymaster) and Captains, R.M., at nine and twelve years' seniority. Formerly, the highest rates of pay of these officers had been reached after six years in those ranks. Executive, accountant and marine officers, in place of a maximum of 30s. 10d. a day after six years, may now receive 32s. 10d. a day after nine years, and 34s. 10d. a day after twelve years. Engineer officers, in place of a maximum of 34s. 4d. after six years, may now receive 36s. 4d. after nine years, and 38s. 4d. after twelve years. The new rates, in common with others, are subject to a reduction of 2s. a day for married officers who elect to receive the newly-granted marriage allowance.

PAY OF S.S. RATINGS.—From 1st May, the rates of pay of Special Service ratings (those entered for less than the normal twelve years engagement) were assimilated to continuous service rates. This meant an increase of 6d. a day for the non-continuous men.

MARRIAGE ALLOWANCES.—A White Paper (Cmd. 5746) was published on 17th May explaining the new scheme for the grant of marriage allowances to naval and marine officers. It also disclosed a concession in the matter of free and assisted passages for the families of officers appointed to shore billets abroad. In the original Fleet Order of 7th April, this privilege was to be abolished for officers drawing marriage allowances. It has now been restored, the White Paper announcing that free passages will be granted to the family of any officer in such an appointment who desires to join him; but if, for personal reasons such as the needs of a growing family, the officer does not desire this, and certifies that he is maintaining a separate home for them, he will draw marriage allowance with children's allowances, even if provided with quarters abroad.

PROMOTION OF WARRANT OFFICERS.—Improvements in regard to promotion and conditions of service of Warrant Officers and above have been made. The system of automatic promotion to Commissioned Officer from warrant rank after 10 years seniority will be abolished, and a zone system of promotion by selection will be substituted. The zone will extend from 8 to 12 years seniority as Warrant Officer, promotions being adjusted so that the average seniority on promotion will be at 10 years as at present. Broadly speaking, the change will apply to Warrant Officers who were under 4 years seniority on 1st April, 1938—that is, the change will begin to operate in 4 years time and will be completely effective in 8 years time. Promotion to Lieutenant will be made by selection within a zone of from 5 years seniority as Commissioned Officer from Warrant rank to the age of 49, but a proportion of the promotions to Lieutenant will continue to be made from officers now serving for long and zealous service. The present quota of Lieutenants from Warrant rank—8 per cent., will be increased and based on requirements, but for the time being a proportion of 10 per cent. will be the objective.

RE-EMPLOYMENT.—Owing to the shortage of officers in the Gunner and Gunner (T) branches, it has been decided to continue to offer employment beyond the age of 50 to Commissioned Officers from Warrant rank, and also to a limited number of officers who reached the rank of Lieutenant on the Active List in these branches. Retired pay will be suspended during re-employment, and a bonus of 15 per cent. on full pay, exclusive of any allowances, will be paid in lieu of counting the period of re-employment for increased pension.

RE-ENGAGEMENT OF RATINGS.—Until further notice, re-engagement after completing time for pension will be allowed to ratings of all branches, except Royal Marines, where suitable vacancies exist. Those of the artificer and shipwright branches who have been discharged to pension not more than 5 years, and those of other branches discharged not more than 2 years, may be considered for re-engagement. Artificers and shipwrights are not to be employed beyond the age of 56, and other branches beyond the age of 50.

LIFE INSURANCE SCHEME.—A scheme to enable naval ratings and Royal Marines (other ranks) to make provision from their pay for life and endowment assurance to accrue to them on discharge or for the benefit of their dependents, has been introduced, similar to that started two years ago for officers. Two offices, the Equitable Life Assurance Society and the North British and Mercantile Insurance Company, will make reductions in the premiums to be charged to Navy men in return for the grant of special facilities within the Service. Premiums will be met by monthly deductions from pay in the form of allotment charges, and medical examination, although not generally required, will when necessary be made by a naval medical officer.

PAYMASTER LIEUTENANTS (ex-Warrant Rank).—In consequence of representations in the Review of Service Conditions, it has been decided that the number of Paymaster Lieutenants (ex-Warrant rank) in the Writer and Supply branches shall be increased by 5 in each branch, over and above the numbers allowed by the 8 per cent. rule. Additional promotions will be made as vacancies occur. The establishment of Warrant Cooks and above will be increased to 3 Paymaster Lieutenants (ex-cook), 4 Commissioned Cooks, and 13 Warrant Cooks.

USE OF SOUND FILMS.—A scheme for the more general use of sound reproduction equipment in ships both for official purposes and for entertainment was described in Fleet Orders dated 19th May. Their Lordships have decided to install such equipment in the majority of seagoing ships down to and including river gunboats,

but excluding individual submarines. For the use of the equipment for ordinary sound films, gramophone records, and broadcast music, the personnel will pay half the cost of maintenance.

The R.N. Film Corporation, of which the Duke of Kent is Patron and the members of the Board of Admiralty are Governors, and which has been formed to provide films of a good standard at moderate cost on board ship, has received a donation of £20,000 from a group of shipbuilding and engineering firms on the Admiralty list, in recognition of the services to the nation of the men of the lower deck.

NAVAL DISCIPLINE BILL.—On 31st May, the Parliamentary Secretary to the Admiralty presented to the House of Commons the Naval Discipline (Amendment) Bill, to provide for subjecting to naval discipline certain persons who engage with the Admiralty to serve His Majesty in ships and agree to become subject to the Naval Discipline Act. Formerly the Act provided that the personnel of merchant and fishing vessels taken over by the Admiralty on the outbreak of war should be subject to naval discipline. The new Bill gives the Admiralty power to put the Act into force in an emergency in advance of hostilities. The words "in time of war" have been dispensed with altogether.

PRIZES AND TESTIMONIALS.—The Beaufort and Wharton Testimonials for the year 1937 have been awarded to Sub-Lieutenant F. D. Holford, R.N., H.M.S. "Wolverine."

A prize of £20 has been awarded to Lieutenant (E) R. C. Paige, R.N., H.M.S. "Curacao," on the result of the examination held on conclusion of the advanced engineering course at Greenwich.

No essay submitted for the Henry Leigh Carslake Prize for 1938 was deemed of a sufficiently high standard for the medal, but Lieutenant B. J. C. Wise, R.N., H.M.S. "Courageous," has been awarded a prize of books or instruments to the value of five guineas.

The first award of the John Crocker Memorial Prize for 1937 has been made to Sub-Lieutenant (E) R. A. Cluett, R.N., of Keyham College.

Eardley Howard-Crockett Prizes have been awarded to Chief Cadet Captains Michael F. Millar and David A. Dunbar-Nasmith, who passed out of the R.N. College, Dartmouth, in April, 1938.

FENCING TROPHY.—Mrs. Gwendoline St. John has presented a bronze trophy for sabre fencing in memory of her son, Acting Sub-Lieutenant R. G. St. John, R.N., to be presented to the naval officer who gets furthest in the sabre competition open to cadets at the Royal Tournament, Olympia.

The Gilbert Blane Medal for the year 1938 has been awarded to Surgeon-Commander S. G. Rainsford, M.D., D.P.H., R.N.

MATERIAL

40,000 TON BATTLESHIPS.—It is officially announced that, following on the Agreement for an increased size of capital ships, the two battleships of the 1938 Programme will "not exceed 40,000 tons," and will carry 16-in. guns.

1938 PROGRAMME.—First contracts under this programme were placed by the Admiralty in May for one "T" class submarine from each of the firms Vickers-Armstrongs and Cammell Laird and Co. The third submarine of the programme will be built at Chatham Dockyard.

The two river gunboats of the programme were ordered on 20th June from Messrs. Yarrow and Co., Scotstoun.

1937 PROGRAMME.—Contracts for the eight destroyers of the "Laforey" class were announced on 1st April, as follows:—

- "Laforey" and "Lance"—Yarrow and Co., Scotstoun.
- "Larne" and "Lively"—Cammell Laird and Co., Birkenhead.
- "Legion" and "Lightning"—Parsons Marine Steam Turbine Company, Wallsend-on-Tyne (hulls by Hawthorn, Leslie and Co.).
- "Lookout" and "Loyal"—Scotts Shipbuilding and Engineering Company, Greenock.

The destroyer depot-ship "Tyne" has been ordered from Scotts Shipbuilding and Engineering Company.

Orders for the three patrol vessels of the "Guillemot" class were placed in April as follows:—

- "Guillemot" and "Pintail"—William Denny and Brothers, Dumbarton.
- "Shearwater"—J. Samuel White and Co., Cowes.

The small minelayer "Ringdove," for service at Hong Kong, was launched by Messrs. Henry Robb, Leith, on 15th June.

The boom defence vessel "Barfair" was launched by John Lewis and Sons, Aberdeen, on 31st May.

The keel of the cruiser "Trinidad," last of the five of the "Fiji" class, was laid at Devonport Dockyard on 21st April.

1936 PROGRAMME.—The keel of the "Sirius," last of the five of the "Dido" class of this programme, was laid at Portsmouth Dockyard on 6th April.

The submarine "Thetis" was launched by Cammell Laird and Co., Birkenhead, on 29th June. The submarine "Seal" is to be launched at Chatham Dockyard in September.

The escort vessel "Egret" was launched by J. Samuel White and Co., Cowes, on 31st May.

The minesweeper "Leda" was completed at Devonport Dockyard on 19th May to replace the "Cherwell" in the Fishery Protection Flotilla. The "Jason," fitted for surveying duties, was completed by the Ailsa Shipbuilding Company, Troon, on 9th June to replace the "Flinders."

The escort vessel "Auckland," fitted for surveying duties, as an additional ship for service in New Zealand, was launched by Messrs. Denny and Brothers, Dumbarton, on 30th June.

The river gunboat "Scorpion," for service as flagship on the Yangtze in succession to the "Bee," is to be ready to leave for Hong Kong by 31st August.

The trawler "Mastiff" was delivered at Chatham on 15th May by Messrs. Henry Robb, Leith, and was commissioned for the Fishery Protection Flotilla in place of the "Foyle."

Motor Minesweeper No. 1 was commissioned at Portsmouth on 2nd May as tender to the "Hastings." M.M.S. No. 2 was commissioned at Chatham on 27th May with Portsmouth crew as tender to the "Hastings," for service in the 6th Minesweeping Flotilla, Portland.

1935 PROGRAMME.—The cruiser "Manchester" was completed by Hawthorn, Leslie and Co., Limited, at Hebburn-on-Tyne in July, and the "Liverpool" is due

for completion by the Fairfield Shipbuilding Company, Govan, in September, to replace the "Enterprise" and "Emerald" respectively in the East Indies.

The submarine depot-ship "Maidstone" was completed by John Brown and Co., Limited, Clydebank, on 6th May, and arrived at Portsmouth next day to prepare for service in the Mediterranean in place of the "Cyclops."

The destroyer "Afridi," first of the "Tribal" class, was completed by Vickers-Armstrongs, Limited, Walker-on-Tyne, on 29th April, and arrived at Portsmouth next day. She left Portland on 27th May for Malta, arriving on 3rd June. The "Cossack" was completed by the same firm on 10th June and completed to full crew at Portsmouth on the 14th, leaving for the Mediterranean in July.

ORGANISATION AND DISTRIBUTION

BATTLESHIPS.—The "Ramillies" was ordered to Devonport in July to reduce and de-store before undergoing large repairs, for which £200,868 is voted in the Navy Estimates. The "Resolution" was to commission on 22nd July and complete on 30th July after refit, for the Home Fleet, as a boys' training ship.

The "Barham" recommissioned at Portsmouth on 24th May after refit for further service in the Mediterranean, and left for Lamlash on 10th June to work up there and at Portland before proceeding to Malta.

BATTLE-CRUISERS.—The "Repulse" will be taken in hand for refit at Portsmouth on 1st October, and will recommission at the end of January to return to the Mediterranean. The "Hood" will afterwards be refitted at Portsmouth and will recommission about the middle of June, 1939.

CRUISERS.—The "Effingham" completed conversion to a 6-in. gun cruiser on 21st June, and relieved the "Hawkins" as flagship of the Reserve Fleet. The "Kent" was commissioned at Chatham on 24th May after large repairs for further service as flagship in China, and was due to leave for her station in July.

The "Enterprise," withdrawn from the East Indies, where the "Manchester" is to replace her, has been employed on a trooping voyage to China.

DESTROYERS.—On being withdrawn from the Home Fleet, in which they will be replaced by the 2nd Tribal Flotilla, vessels of the "Beagle" class will relieve older destroyers in local defence and training units at home. The "Brilliant," "Blanche" and "Boadicea" may relieve the "Vanquisher," "Walpole" and "Wanderer" in the 1st Anti-Submarine Flotilla.

MINESWEEPERS.—The "Dunoon," "Ross" and "Sutton" arrived at Malta from home on 15th May to complete the 3rd Minesweeping Flotilla, replacing vessels sent earlier in the year to Singapore.

FISHERY PROTECTION.—The "Penzance" from the Africa Station recommissioned on 16th May for the Fishery Protection Flotilla, Portland, in place of the "Lupin." The "Kingfisher" is to be relieved in August by the trawler "Lilac" and is to relieve the "Wolfhound" in the 1st Anti-Submarine Flotilla.

FLEET AIR ARM

FIFTH SEA LORD.—The appointment of a Fifth Sea Lord and Chief of Naval Air Services is referred to under "Board of Admiralty."

AIR BRANCH OFFICERS.—The first group of forty candidates for the new short-service Air Branch, Royal Navy, joined H.M.S. "Hermes" at Devonport to begin their training on 19th April. They included thirteen who, having attained 22 years

of age, were entered as Acting Sub-Lieutenants (A), and twenty-seven under that age who were entered as Midshipmen (A).

AIR BRANCH BADGE.—The King has approved the adoption of a distinctive badge to be worn by officers of the Air Branch of the Royal Navy, consisting of a capital letter "A" in silver enclosed within a laurel wreath of gold embroidery. It is to be worn in the centre of the left sleeve immediately above the curl in the uppermost row of distinction lace, or in the corresponding position in the case of officers who do not wear the curl. It will also be worn on both shoulder straps with the greatcoat, white tunic and white mess jacket, and in tropical dress.

The question of the position of the existing Fleet Air Arm badge and pilot's wings is under consideration.

TRANSFERS FROM R.A.F.—From 5th May onwards, the Admiralty have announced the transfer of a number of short-service and medium-service officers of the Royal Air Force to the Air Branch, Royal Navy, under the scheme outlined in the May issue of the JOURNAL (page 431). The first to be so transferred was Flight Lieutenant A. J. D. Harding, who was appointed Lieutenant (A), R.N., to date 1st April, for duty in H.M.S. "Glorious."

RATING PILOTS.—The first group of lower-deck ratings to qualify as air pilots are now under training. Men who are specially recommended as likely to make good rating pilots may now be reported to the Admiralty, even if they have not passed professionally for leading rating, provided they are otherwise qualified. Selection must depend partly on the branches and ratings from which men can most easily be spared.

RATING OBSERVERS.—Warrant rank as Boatswain (O) will eventually be open to ratings who qualify as Observer's Mate, the course for which lasts seven months and is a simplified form of that for Officer Observers. The titles, qualifications and employment of Warrant Officers promoted from Observers' Mates are at present under review.

AIR MATERIAL DEPARTMENT.—Commander R. St. A. Malleson (Wing Commander, R.A.F.) was appointed to the new post of Assistant Director of the Air Material Department from 23rd June, and was succeeded as Senior F.A.A. Officer and Squadron Aviation Officer in H.M.S. "Courageous" by Lieutenant-Commander (Squadron Leader, R.A.F.) J. H. F. Burroughs, with acting rank of Wing Commander.

MISCELLANEOUS

NAVY RECORDS SOCIETY.—Their Lordships desire to encourage officers to join the Navy Records Society and lend it the support of a strong naval membership to continue the study and elucidation of naval history. The Honorary Secretary is Captain A. C. Dewar, O.B.E., R.N., care of the Library, Admiralty, S.W.1.

LAUNCHING COLOURS.—At all launches of H.M. ships, whether dockyard or contract built, at which there is a naming ceremony, the White Ensign is to be flown at the ensign staff, the Union Flag at the jack staff and the Admiralty Flag at the main masthead or equivalent position.

ROSYTH DEPOT SHIP.—H.M.S. "Ambrose" was renamed "Cochrane" on 1st June and took over the duties of parent ship at Rosyth, in succession to the "Greenwich," which reverted to her former role as depot ship for destroyers in maintenance reserve.

RIFLE COMPETITION SUCCESS.—The Lord Roberts Trophy at the Imperial Challenge Shields Rifle Competition, 1937, was won for the third year in succession

by boys from H.M.S. "Ganges," who also took second place for the Lord Milner Trophy. Their Lordships have noted with satisfaction the excellent results achieved.

SULTAN OF MUSCAT'S VISIT.—The Sultan of Muscat and Oman visited Portsmouth on 5th April and went on board H.M.S. "Nelson," a motor torpedo-boat, and the submarine "Sunfish," in which he made a diving trip at Spithead.

PRESENTATION TO H.M.S. "EDINBURGH."—The National Association of Goldsmiths, to commemorate their first conference in Edinburgh, presented a silver rose bowl as a gift to the cruiser "Edinburgh," launched on the Tyne in March and due for completion next year. It will be formally presented to the ship by the Lord Provost on her first visit to the Forth.

ROYAL MARINES

STRENGTH.—The establishment of the Corps has been increased from 10,976 officers and men in 1937 to 11,668 in 1938. These figures are exclusive of Royal Marine Police, the number of whom has increased from 895 to 913.

SEARCHLIGHT ALLOWANCE.—Specialist allowance of 2s. 6d. a day has been granted by Order in Council to Lieutenants and Captains, R.M., in respect of searchlight duties. Non-Specialist allowance of 1s. a day is also payable to such officers who perform the duties of a specialist where one is allowed by complement but not borne.

ROYAL NAVAL RESERVE

CHANGE OF ENGINEER TITLES.—Changes have been made in the titles of R.N.R. and R.N.V.R. engineer officers. The rank of Engineer Captain (honorary rank only) will in future be known as Captain (E); Engineer Commander as Commander (E); Engineer Lieutenant-Commander as Lieutenant-Commander (E); and Engineer Lieutenant as Lieutenant (E).

These alterations do not apply to the following officers, who will retain the old titles : (a) Officers placed on the Retired List prior to 1st April, 1938; (b) officers granted the rank of honorary Engineer Captain, Engineer Commander, or honorary Engineer Commander prior to 1st April, 1938.

MERCHANT NAVY DEFENCE COURSES.—A new Order in Council provides that R.N. and R.M. pensioners re-entered in the Navy for instructional duties in connection with the Merchant Navy Officers' Defence Course are to be under similar conditions of service and with the same rates of pay and allowances as instructors to the R.N. Volunteer Reserve, with effect from 18th November, 1937.

ROYAL NAVAL VOLUNTEER RESERVE

REFERENCE BOOKS.—Members of the R.N. Volunteer Supplementary Reserve may purchase the following books of reference at the reduced prices allowed to serving officers (i.e., 25 per cent. below cost price) : Manual of Seamanship, Vol. I; Admiralty Manual of Navigation, Vol. I; and Signal Card.

LONDON NAVY WEEK.—Navy Week of the London Division will be held in H.M.S. "President" from 27th August to 4th September. Last year there was a record attendance of over 20,000 during the week.

DOMINION NAVIES

ROYAL AUSTRALIAN NAVY

TWO NEW CRUISERS.—The cruiser "Apollo" will be transferred from the Royal Navy to the Australian Navy about September next, and her sister-ship, the "Amphion," about July, 1939; the King has approved of their being renamed "Perth" and "Hobart." The home Government have agreed to purchase the seaplane-carrier "Albatross" as part of the arrangement, and she will probably be navigated to England this autumn by the Australian crew for the "Apollo."

REFIT OF THE "AUSTRALIA."—The cruiser "Australia" was paid off at Sydney in April for a long refit, and on 19th April the "Albatross" was recommissioned with a full complement after being out of commission for five years. Captain H. G. D. Acland, D.S.O., R.N., transferred from the "Australia" to the "Albatross" in command.

CAPTAIN-SUPERINTENDENT, SYDNEY.—Captain H. C. Phillips, R.N., has been appointed Captain-Superintendent of the Dockyard at Sydney, and Captain-in-Charge, New South Wales, in succession to Captain G. A. Scott, D.S.C., R.N.

VISIT OF THE "DORSETSHIRE."—H.M.S. "Dorsetshire," Captain F. R. Barry, visited Sydney from the China Station from 2nd April to 28th April, and Cairns from 2nd to 5th May.

ROYAL CANADIAN NAVY

NAVAL EXPANSION.—Canada has purchased two more "C" class destroyers, thus increasing her flotilla of these vessels from four to six. It is understood that four of them will be based on Esquimalt and two on Halifax. H.M.S. "Comet" arrived at Chatham on 19th May from the Mediterranean, and after giving leave transferred her crew to the "Wishart" on 11th June, after which she was taken over for service in the Canadian Navy. H.M.S. "Crusader" arrived at Chatham on 4th April and was also taken over by the Canadian Navy in June. These vessels have been renamed "Restigouche" and "Ottawa" respectively.

Four small minesweepers are also under construction.

SPRING CRUISE.—The "Saguenay" and "Skeena" returned to Halifax on 19th May from the spring cruise in company with the "Fraser" and "St. Laurent."

NEW ZEALAND DIVISION, ROYAL NAVY

ADDITIONAL COMMODORE APPOINTED.—Concurrently with the arrival of Captain H. E. Horan, D.S.C., R.N., for duty as Commodore, 2nd Class, and First Naval Member and Chief of Naval Staff, in succession to Rear-Admiral the Hon. E. R. Drummond, C.B., M.V.O., this appointment was separated from that of Commodore Commanding the New Zealand Squadron. Captain I. G. Glennie, R.N., commanding the cruiser "Achilles," assumed command of the New Zealand Squadron on 8th June with the rank of Commodore, 2nd class.

ROYAL INDIAN NAVY

SUMMER CRUISE.—The programme for the squadron of the Royal Indian Navy provided for a cruise in the Gulf of Oman during July and August, the ports to be visited including Muscat, Khor Fakan, Dibah Bay, Khor Jirana, Elphinstone Inlet,

and Khor Kuwai. The squadron consisted of the "Clive," flagship of Rear-Admiral H. Fitzherbert, C.B., C.M.G., "Indus," "Hindustan" and "Lawrence," and is due to return to Bombay in September.

SOUTH AFRICA

NAVY WEEK.—From the profits of Navy Week held at Simonstown in January, 1938, a donation of £25 has been made to the R.N. and R.M. Officers' Civil Employment Committee.

FOREIGN

DENMARK

NEW CONSTRUCTION.—The following names have been allotted to vessels under construction: "Lindormen"—mining vessel; "Søløven," "Søbjørnen," "Søulven"—minesweepers; "Freja"—survey ship. The minesweeper "Søløven" has been renamed "Søridderen."

FRANCE

SUPPLEMENTARY PROGRAMME.—A new supplementary naval *Tranche* makes provision for the following ships to be laid down before 1st January, 1940: two 35,000-ton capital ships; one second-class cruiser of 8,000 tons; five destroyers of 1,800 tons; five destroyers of 1,000 tons; seven submarines; 10,000 tons of auxiliary craft; and three fleet oilers.

NEW CONSTRUCTION.—Orders have been placed for laying down one 35,000-ton battleship and one aircraft carrier. The former will be the third ship of this displacement and presumably of the same type as the two "Richelieus," with eight 15-in. guns mounted in two quadruple turrets superimposed forward; she is one of the ships of the Supplementary Programme mentioned above. The aircraft carrier is one of the two for which provision was made in the original 1938 programme.

Four aircraft refuelling vessels of 1,500 tons are also being laid down.

FLAG APPOINTMENTS.—A number of changes in Flag appointments were made earlier in the year. Vice-Admiral Gensoul has been appointed to command the Atlantic Squadron; Vice-Admiral Ollive to the Mediterranean Squadron; Rear-Admirals Marquis to the Third Cruiser Division, Lacroix to the Second Light Squadron, Donval to the Second Destroyer Flotilla, Moreau to the Second Submarine Flotilla, and Odend'Hal to the Naval War and Staff Colleges.

MERCANTILE MARINE.—The sum provided to give support to the French Mercantile Marine is increased this year from 4,000,000 to 20,000,000 francs. This is paid to shipowners in proportion to the sums borrowed by them. The amount available for speed premiums is also increased from 1,500,000 to 10,000,000 francs. The object is to encourage the construction of new tonnage, especially of oil tankers.

A leading article published in *Le Temps* of the 4th May states that French tonnage has decreased by 66,516 tons, and is now less than 3,000,000, of which more than half is fifteen years old. One of the principal reasons for this decline is stated to be the application of the 40-hour week since the 1st April last year. This has resulted in the wage costs having been increased by 20 per cent., or from 120,000,000 to 130,000,000 francs per annum.

GERMANY

A DANUBE FLOTILLA.—The German navy has taken over the patrol vessels of the Austrian Army on the Danube, and a Danube Flotilla with a Kapitan zur See in command has been formed.

FLAG APPOINTMENTS.—Rear-Admiral von Fischel has been appointed head of the General Navy Office in the Admiralty, and Rear-Admiral Marschall Commander-in-Chief, Armoured Ships.

ITALY

NAVAL REVIEW FOR HITLER.—A Grand Naval Review took place off Naples in connection with Herr Hitler's official visit to Italy. The King of Italy, Signor Mussolini and Herr Hitler embarked in the battleship "Cavour," and the various units moved out of harbour in succession, headed by the torpedo flotilla. The exercises opened with a reconnaissance by twelve flying boats to locate submarines. The position of the latter was marked by dropping smoke puffs. Smoke screens were then laid across the flagship's bows by a destroyer and low-flying aircraft; through this, torpedo craft attacked. The 8-in. cruisers "Fiume" and "Zara" then engaged the target ship "San Marco." After this the fleet was attacked by a force of some ninety submarines. These dived to below periscope depth simultaneously, then surfaced together and fired a salute of 21 guns. Twenty-four motor-torpedo boats then made for the flagship at high speed, closing to 3 cables and then making off.

On her way into harbour the "Cavour" was saluted by a fly-past of naval reconnaissance squadrons, and a Royal salute was fired from the fleet on anchoring. In the evening the ships were flood-lit. The review had evidently been very carefully rehearsed and was most impressive.

NEW CONSTRUCTION.—The battleship "Impero" was laid down at Ansaldo's Yard on 14th May. It is believed that she and a sister ship, the "Roma," will displace 35,000 tons and carry 15-in. guns.

The destroyer "Corazziere" and submarines "Galvani" and "Beilul" were launched during the month of May.

COAST DEFENCE.—Hitherto coastal batteries and anti-aircraft batteries in naval areas have been manned by the navy, but they are now being transferred to a new branch—the Coastal Militia. This will be under naval training and control, but the effect is to release a large number of naval personnel for service afloat.

JAPAN

NEW AIRCRAFT CARRIERS.—The 10,000-ton seaplane carrier "Mizuo" was launched at Kawasaki Dockyard, Kobe, on the 16th May. She is a sister ship to the "Chiyoda," launched in the Naval Yard at Kure at the end of last year, and the "Chitose," which has already joined the fleet.

The oilers "Kamoi" and "Notoro" have been converted to carry aircraft, and during the present hostilities in China three merchant ships are also in use as seaplane carriers.

EX-CHINESE WARSHIPS.—It is reported that two Chinese warships, which were damaged in the recent fighting and stranded in the Yangtse, have been refloated and refitted by the Japanese. They are one of the two comparatively modern 2,500 ton cruisers "Ning Hai" or "Ping Hai," and the 1,650 ton cruiser "Yat Sen."

POLAND

NEW CONSTRUCTION.—The minelayer "Gryf," said to be the largest unit in the Polish navy, was completed at Le Havre early in the year. She displaces 2,250 tons and is propelled by two Diesel engines with a designed full speed of 20 knots. She carries six 4.7-in. and two 3.5-in. A.A. guns. In addition to being a minelayer, the "Gryf" is specially equipped to act as a training ship for the senior classes of the Naval Cadet School.

NAVAL YARD AT GDYNIA.—Work is proceeding steadily on the naval yard at Gdynia. It will cover an area of about 123 acres and will be equipped with four slipways, the smallest of which is 426 feet long and is nearly completed.

PORTUGAL

NEW CONSTRUCTION.—The provision made in the Decree Laws of 1930 and 1932 for the modernization of the Portuguese navy has been completed with the launch of the sloop "Joao de Lisboa" in April, 1936. A new Decree Law of the 2nd May, 1938, has authorized an expenditure of approximately £2,225,000 on the second phase of naval construction. This will provide for three destroyers of 1,400 tons; three submarines of 900 tons; six motor torpedo boats; six armoured launches (including two of the first period); one oil tanker; and one survey ship. Two long-range scouting seaplane squadrons, one bomber and torpedo squadron, and one reconnaissance squadron are also provided for.

The construction of both ships and aircraft is to be carried out in Portugal, but the material will be purchased abroad as required.

SOVIET UNION

NEW CONSTRUCTION.—According to an Italian report, Soviet Russia is completing four 8,500 ton cruisers; eight 2,900 ton destroyers; two torpedo boats; nineteen submarines; two minelayers; and a 12,000 ton aircraft carrier.

The cruisers include the "Kirov" and "Voroshilov," laid down in 1913-14 but neglected for many years, of which the "Kirov" has been running trials. No details are known of the remaining two.

The destroyers are additional to the four ships of the "Leningrad" class which have been built in recent years. The latter are a thousand tons bigger than our "Tribals"; they carry five 5.1-in. guns and six 21-in. triple tubes, to the British ships' eight 4.7-in. guns and four 21-in. tubes. The designed speed of both is much the same—about 36 knots.

The aircraft carrier is probably a 9,000 ton cruiser, laid down in 1914, converted. This vessel is listed in *Jane's Fighting Ships* as the "Stalin."

PROGRAMME FOR 1938.—It is reported that the building programme for 1938 includes two 35,000 ton battleships, two 12,000 ton aircraft carriers and three 8,000 ton cruisers. The new Agreement for an increase in maximum displacement of capital ships may, however, affect the design of the first items in this programme.

FLOATING DOCK FOR MURMANSK.—It is reported that a floating dock is being completed at Leningrad for use at Murmansk. The displacement will be 6,000 tons, length 426 feet, beam 100 feet. It is intended that the dock shall be suitable for ships of considerable draft.

SPAIN

GOVERNMENT NAVY.—The Government naval forces appear to have been inactive since the sinking of the Insurgent cruiser "Baleares." It is reported that they now consist of the two cruisers "Miguel de Cervantes" (7,475 tons with eight 6-in. and four 4-in. A.A. guns), and the "Mendez Nunez" (4,509 tons, six 6-in. and four 3-pdr. A.A. guns), and eight flotilla leaders, all of which are reported to be in a state of readiness at Cartagena. The cruiser "Libertad" (7,475 tons) is reported to have been badly damaged by bombs during an air raid on that port on the 17th April.

GENERAL FRANCO'S NAVY.—It is reported that the destroyer "Ciscar," sunk in Gijon harbour when that port was evacuated by the Government forces, has been raised.

The principal units of the Insurgent fleet have been employed in maintaining a patrol in the Malta channel to intercept foreign merchant ships from ports in the Eastern Mediterranean making their way to Government ports with munitions of war. They appear to have had a certain amount of success; for example, it is known that, during the third week of May, five Greek vessels, all ostensibly bound for Oran but with cargoes of lorries and other munitions believed to have been destined for Government Spain, were intercepted and taken into Palma.

UNITED STATES

NEW CONSTRUCTION.—The following is a summary of the position in regard to New Construction:—

Replacement Programme—

Battleships.

1936-38 Programme:

" North Carolina "	..	..	..	Laid down 27th October, 1937.
" Washington "	Keel not yet laid.

1938-39 Programme:

Two	Construction approved.
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Two, asked for by President to replace

older vessels and to be laid down

immediately Construction not yet approved.

Other vessels now building for replacement:—

3 aircraft carriers.

3 heavy cruisers.

7 light cruisers.

59 destroyers.

18 submarines and various auxiliaries.

Construction approved but not yet laid down:—

2 light cruisers.

8 destroyers.

6 submarines and auxiliaries.

BATTLESHIP POLICY.—As mentioned in the International Situation (see p. 620), the United States have decided to build battleships of 45,000 tons. It is assumed that this will apply to the two new battleships which are to be laid down before the 1st January, 1939, also to the three additional ships authorized under the Naval Expansion Bill.

EXPANSION PROGRAMME.—Under the Naval Expansion Bill the United States navy will be permanently increased by the addition of three battleships, two 20,000 ton aircraft carriers, twenty-three destroyers, nine submarines, twenty-six auxiliaries and 950 naval aircraft. This programme will not give the United States navy parity with Great Britain so far as numbers are concerned, but there will be no appreciable disparity between the two navies in aggregate tonnage. It will also perpetuate the present margin of naval superiority possessed by the United States over the Japanese navy.

NAVAL AIR SERVICE.—The authorized number of useful airplanes including shore-based long-range patrol flying boats in the U.S. Naval Air Service is increased from 2,050 to "not less than 3,000."

The Expansion Bill authorizes appropriations of \$15,000,000 for the construction of experimental vessels of 3,000 tons standard displacement or under, and \$3,000,000 for an American designed and constructed rigid airship, both to be expended at the discretion of the President.

In effect the provisions of the Bill increase by approximately 50 per cent. the strength of a Naval Air Service already more than twice as strong as that of any other Power in the world.

ARMY NOTES

HIS MAJESTY THE KING

VISIT OF THEIR MAJESTIES TO THE ALDERSHOT COMMAND.—His Majesty The King, accompanied by Her Majesty The Queen, visited the Aldershot Command on 12th April, 1938. Their Majesties witnessed a demonstration by infantry and tanks in the attack, in which troops of the 1st Division took part. Their Majesties were received by :—

Lieutenant-General Sir John G. Dill, G.O.C.-in-C., Aldershot Command.
Major-General C. N. F. Broad, Major-General i/c Administration, Aldershot Command.

Brigadier A. E. Percival, Brigadier General Staff, Aldershot Command.
Brigadier T. G. G. Heywood, Brigadier, Royal Artillery.
Major-General Hon. H. R. L. G. Alexander, Commander, 1st Division.
Brigadier A. G. Cunningham, Commander, Royal Artillery, 1st Division.
Brigadier L. Carr, Commander, 2nd Infantry Brigade.

After the demonstration His Majesty drove to Hawley Lake, in the Minley Manor training area. On arrival, The King witnessed a demonstration of military bridging by troops of the 2nd Division. An Infantry Brigade Headquarters with war equipment was also inspected.

Arriving at Oudenarde Barracks at 12.45 p.m., His Majesty was received by Lieutenant-Colonel C. H. Woodhouse, Officer Commanding 2nd Battalion, The Dorsetshire Regiment, where he inspected the cookhouse and dining-hall and saw the troops having dinner. The King then proceeded to Government House for luncheon with the General Officer Commanding-in-Chief.

After the demonstration at Jubilee Hill, Her Majesty The Queen motored to The Queen Mary's Home for Children, where she was received by Mrs. Broad and the Hon. Mrs. Thorne. The Queen then drove to the Louise Margaret Hospital, where she inspected The Queen Mary's Wing. She was received there by Major-General F. D. G. Howell, Deputy Director of Medical Services, Aldershot Command, and Lieutenant-Colonel J. C. A. Dowse, Officer Commanding, Louise Margaret Hospital. The Queen next proceeded to the R.A.S.C. cookhouse and dining-hall in Buller Barracks and saw the men of the R.A.S.C. at dinner. Her Majesty was received by Brigadier C. G. C. Blunt, Assistant Director of Supplies and Transport, Aldershot Command, and Colonel R. M. Airey, Commandant of the Royal Army Service Corps Training Centre. Her Majesty then joined The King at Government House for luncheon.

In the afternoon The King and Queen drove to Blackdown, where they were received by Brigadier H. C. Ponsonby, Commander, 6th Infantry Brigade, and the Commander of the 1st Anti-Aircraft Group at Blackdown, and Lieutenant-Colonel S. G. Simpson, Command Education Officer. Their Majesties inspected the new married quarters, the new school for soldiers' children, a modern type of soldiers' barrack block, and the latest type of officers' mess. The King and Queen then motored to Chobham Ridges, where they witnessed an anti-aircraft battery of the 1st A.A. Group in action.

THE KING'S BIRTHDAY PARADE.—His Majesty was present at The King's Birthday Parade on 9th June, 1938, on the Horse Guards Parade. The King was accompanied by the Duke of Gloucester—Colonel, Scots Guards, the Duke of Kent—Colonel-in-Chief, The Royal Fusiliers, the Earl of Harewood—Honorary Colonel, 8th Battalion, The Royal Fusiliers (T.A.), and Major-General the Earl of Athlone—Colonel, the Life Guards.

The troops on parade, under the command of Lieut.-Colonel W. P. A. Bradshaw—Scots Guards, Field Officer in Brigade Waiting, received The King with a General Salute.

Queen Mary, accompanied by the Princess Elizabeth and the Princess Margaret, drove to the Horse Guards and witnessed the parade.

On the conclusion of the parade, His Majesty rode back to Buckingham Palace at the head of The King's Guard, preceded by the combined bands of the Brigade of Guards. Royal Salutes were fired by "K" Battery, R.H.A., in Hyde Park, and from the Tower of London Saluting Battery by "B" Battery, Honourable Artillery Company.

ALDERSHOT TATTOO.—The King and Queen attended the final performance of the Aldershot Tattoo on 18th June, 1938—the anniversary of the battle of Waterloo—at Rushmoor Arena, where they received an enthusiastic reception from 77,500 spectators. After dining with Lieutenant-General Sir John Dill—General Officer Commanding-in-Chief, Their Majesties, accompanied by the Princess Royal and the Earl of Harewood, drove to the Royal box in an open landauette.

General the Viscount Gort—Chief of the Imperial General Staff, and Captain the Lord Strathcona and Mount Royal—Parliamentary Under-Secretary of State for War, were in attendance on Their Majesties.

The King took the Salute from the 1st (Guards) Brigade, and at the end of the performance was loudly cheered by the 5000 troops taking part in the performance.

THE DUKE OF CONNAUGHT.—Field-Marshal H.R.H. the Duke of Connaught and Strathearn—Colonel-in-Chief, The Rifle Brigade (Prince Consort's Own), has completed seventy years service on the active list. He was commissioned to the Royal Engineers in 1868, at the age of eighteen, and first saw active service during the Fenian Raid into Canada, 1870. He commanded the Brigade of Guards in the Egyptian Expedition, 1882, and was present at the battle of Tel-el-Kebir, where the British forces under Lord Wolseley, after a night march across the desert, stormed the entrenchments held by the Egyptians under Arabi Pasha.

COLONELS OF REGIMENTS.—His Majesty has approved of the following appointments:—

Brigadier J. H. T. Priestman, C.B.E., D.S.O., M.C., A.D.C., to be Colonel, The Lincolnshire Regiment.

Colonel C. J. Pickering, C.M.G., D.S.O., to be Colonel, the Duke of Wellington's Regiment (West Riding).

AIDES-DE-CAMP TO THE KING.—The following officers have been appointed Aides-de-Camp to the King:—

Brigadier A. B. Beauman, C.B.E., D.S.O.

Brigadier G. C. G. Blunt, D.S.O., O.B.E.

Colonel W. O. Gibbs, T.A.

Brigadier M. H. Dendy, D.S.O., M.C.

Brigadier G. C. Stubbs, D.S.O.

Brigadier V. T. R. Ford, D.S.O.

AIDE-DE-CAMP GENERAL TO THE KING.—General Sir William Bartholomew, K.C.B., C.M.G., D.S.O.—Colonel Commandant, Royal Artillery, to be A.D.C.-General to the King.

HOME

APPOINTMENTS AND PROMOTIONS

The War Office has announced the following appointments and promotions:—

Major-General G. C. Williams, C.B., C.M.G., D.S.O., from Commander, 5th Division, to be General Officer Commanding-in-Chief, Eastern Command, with the rank of Lieutenant-General, with effect from October, 1938.

Major-General P. J. Mackesy, D.S.O., M.C., to be Commander, 49th (West Riding) Division (T.A.), from May, 1938.

Colonel T. J. Hutton, M.C., from G.S.O.I., 1st Division, to be Major-General Commanding the Baluchistan District, India, from August, 1938.

Brigadier A. F. A. N. Thorne, C.M.G., D.S.O., A.D.C., from Commander, 1st (Guards) Brigade, to be G.O.C., London District, with the rank of Major-General, from 1st December, 1938.

Brigadier A. E. Grasett, D.S.O., M.C., from Brigadier, General Staff, Northern Command, to be G.O.C., the British troops in China, with the rank of Major-General, from 1st November, 1938.

Brigadier J. H. T. Priestman, C.B.E., D.S.O., M.C., A.D.C., from Commander, 13th Infantry Brigade, to be Commander, 54th (East Anglian) Division (T.A.), with the rank of Major-General, from 14th September, 1938.

Brigadier R. N. O'Connor, D.S.O., M.C., to be Commander, 43rd (Wessex) Division (T.A.), with the rank of Major-General, from 1st October, 1938.

Brigadier V. H. B. Majendie, D.S.O., to be Commander, 55th (West Lancashire) Division (T.A.), with the rank of Major-General, from 1st June, 1938.

Major-General E. K. Squires, D.S.O., M.C., from Director of Staff Duties, the War Office, to be Inspector-General, the Forces of the Commonwealth of Australia, with the rank of Lieutenant-General.

GENERAL

REORGANIZATION OF THE STAFF COLLEGE.—The system by which officers are selected to attend the Staff College will be reorganized, with effect from January, 1939.

The Staff College will be divided into two wings, a junior wing and a senior wing, both under the Commandant, the Staff College, Camberley.

THE JUNIOR WING.—The object of the course at the Junior Wing will be to train officers to fill appointments up to and including second grade. The length of the course will be one year. The wing will be located at the Staff College, Camberley. Approximately 120 officers will attend each course, of whom about 100 will be officers of the Regular Army. These 100 officers will be selected by open competition and by nomination, about 25 vacancies being allotted to those who obtain the highest marks, the remaining 75 being filled by nomination from among those who have reached the necessary qualifying standard. The other 20 or so vacancies will be available for representatives of the Territorial Army, the Royal Marines, the Royal Air Force, the Dominions, Egypt, Iraq, and foreign countries.

The age of entry to this wing is to be reduced by stages so that for the examination in 1941, and subsequent years, candidates will have to be under 30 years of age

when they present themselves for examination, instead of under 34 years as at present.

THE SENIOR WING.—The object of the course at the Senior Wing will be to train officers to fill first-grade staff appointments, and for command. The length of the course will be one year. This wing will be located at Minley Manor, near Camberley. About 55 officers will attend the course, of whom about 30 will be officers of the Regular Army. These will be nominated for admission by the Army Council. Admission will normally be confined to officers who have previously qualified at the Junior Wing, but officers who have not been trained at Camberley will be eligible for nomination to the Senior Wing, if in the opinion of the Army Council they merit such nomination.

The remaining vacancies will be filled by officers of the Territorial Army, the Royal Navy, the Royal Marines, the Royal Air Force, the Dominions, and the Indian Army.

REORGANIZATION OF THE ROYAL ARTILLERY.—The Royal Artillery is to be divided into two branches. These will be known as the Field Branch and the Coast Defence and Anti-Aircraft Branch. The former will comprise all units of horse, field, mountain and medium artillery, together with 1st Heavy Brigade and the Survey Company and Section. The latter will comprise all heavy artillery (other than 1st Heavy Brigade), and all coast defence and anti-aircraft artillery.

Provision is also made for the gradual absorption of searchlight units of the Royal Engineers into the Coast Defence and Anti-Aircraft Branch of the Royal Artillery.

This reorganization does not apply to the Territorial Army.

The Secretary of State for War, in introducing the Army Estimates on 10th March, 1938, in the House of Commons, stated that there would be certain developments in the Royal Artillery, the fire unit of which in future was to be twelve guns instead of six. With fewer personnel and more centralized control, fire power would, he declared, be better concentrated.

In accordance with this reorganization, The King has approved of certain changes in the nomenclature of formations, units and sub-units within the Royal Regiment of Artillery. The new names will be as follows :—

- (a) A Lieutenant-Colonel's command will in future be known as a "Regiment." Under the old system this command was called a "Brigade."
- (b) A Major's command, which includes the new 12-gun fire unit of the Field Artillery, will be known as a "Battery."
- (c) The sub-units comprising a battery will be known as "Troops" and "Sections."

The above designations will also apply to searchlight units, which have now been taken over by the Royal Artillery. A searchlight battalion is to be known as a searchlight "Regiment," and a company as a "Battery."

REDISTRIBUTION OF INFANTRY.—In his speech introducing the Army Estimates, the Secretary of State for War announced that it was the intention to retain a flexible type of division, consisting of nine infantry battalions for war, and of six battalions for internal security operations overseas. Prior to this decision, divisions had included twelve infantry battalions and had been of one stereotyped pattern only.

This reduction of three infantry battalions in each division has necessitated a

thorough redistribution and regrouping of infantry, particularly in the Aldershot Command, where the bulk of the infantry of the 1st and 2nd Divisions are located. The result of these changes will be that the whole of the infantry belonging to the 1st and 2nd Divisions will in future be located in the Aldershot Command under the direct control of their Divisional Commanders. The infantry of the other divisions will be regrouped in a similar manner. The redistribution is to take effect during the individual training season 1938-39.

DRILL BY THREES.—With a view to bringing close order drill more into line with the requirements of field service, experiments have been conducted on a fairly large scale at Shorncliffe Camp. About 400 men from the 2nd Battalion, The Royal Fusiliers, the 1st Battalion, The Royal Berkshire Regiment, the 1st Battalion, The Prince of Wales's Volunteers, and the 1st Battalion, The Queen's Own Royal West Kent Regiment paraded for a demonstration, which was witnessed by General the Viscount Gort—Chief of the Imperial General Staff, members of the Army Council and the G.O.Cs-in-Chief, Aldershot and Southern Commands. Instead of forming fours and marching in column of fours, the troops formed threes and marched in column of threes. The question of introducing this form of drill generally in the Army is being considered by the Army Council.

TRAVEL IN THREE ELEMENTS.—The 1st Battalion, Coldstream Guards, have carried out an interesting movement from Pirbright Camp to the North Riding of Yorkshire by three means—land, sea and air. The bulk of the battalion motored about 250 miles by road in 72 trucks; the Band and Drums with certain administrative personnel, carrying the unit full-dress uniform and bearskins, sailed for Hull in the S.S. "Cormorant," and two platoons flew from Odham in Vickers Valentia aircraft belonging to No. 50 (Army Cooperation) Wing, R.A.F. All troops reached their destinations according to schedule, and later took part in a field exercise with troops of the Northern Command.

SNIPERS.—The military authorities have decided that—in spite of the development of automatic weapons—accurate rifle shooting is still of vital importance in modern war. During the period 1914-18, battalion snipers proved themselves of immense value and—though accurate figures are lacking—may well have furnished the highest percentage of hits to rounds fired of any method of producing fire effect. Seventy-two picked men per battalion of infantry, therefore, are to be thoroughly trained as snipers. Special equipment is to be issued and practice is to be carried out on field service targets.

DIRECTOR OF SCIENTIFIC RESEARCH.—Dr. H. J. Gough, M.B.E., D.Sc., Ph.D., F.R.S., M.I.Mech.E., Superintendent of the Engineering Department of the National Physical Laboratory, has been appointed to the new post of Director of Scientific Research at the War Office. He will be directly responsible to the Director-General of Munitions Production for the general direction and organization of research work for War Office purposes, for advising as to the programme of research work to be undertaken and as to proposals for specific investigations, and for efficiency of the organization for research and experimental purposes of the various research organizations under the War Office. He will represent that Department on the various inter-departmental research organizations.

Dr. Gough was born on 26th April, 1890. He was educated at University College School and London University. After serving an apprenticeship to Vickers Ltd., he was appointed to the Scientific Staff of the National Physical Laboratory, Teddington, in 1914. During the Great War he served with the Royal Engineers in France and Belgium from 1914 to 1918 and commanded a Signal Section from

1916 to 1919. He was twice mentioned in despatches. He was appointed Cantor Lecturer to the Royal Society of Arts in 1928, and Autumn Lecturer to the Institute of Metals in 1932. He gave the Edgar Marburg Lecture to the American Society of Textile Materials in 1933, and has written extensively on engineering subjects.

ROYAL ARMY ORDNANCE CORPS.—The mechanization of the Army, with its attendant vast increase of work in connection with the inspection and upkeep of equipment and workshops, has necessitated the creation of a new senior post in the Royal Army Ordnance Corps in the shape of an officer who is styled "Inspector of Army Ordnance Workshop Services." Brigadier B. H. Penn, D.S.O., O.B.E., M.I.Mech.E., is the first holder of the post, and among his duties he will assume responsibility for the technical inspection of Royal Army Ordnance Corps workshops, mobilization equipment and field workshop units, and the organization and general supervision of R.A.O.C. artisan training for both men and boys.

This appointment is part of the reorganization of the R.A.O.C., which is now organized in two branches, each with definite responsibilities in its own sphere, under the Director of Ordnance Services—

- (a) The Stores Branch, under the Principal Ordnance Officer, who controls provision, storage and supply of all ordnance stores and the general administration of ordnance questions throughout the Army.
- (b) The Mechanical Engineering Branch, under the Principal Ordnance Mechanical Engineer, who is responsible for all workshop services and technical inspections.

VEHICLE TESTS.—The process of mechanizing the Army has involved the necessity for submitting the material to various natures of tests in all kinds of adverse climatic conditions, including those of desert countries. With this object in view the War Office Experimental Convoy will, towards the end of July, undertake a journey of several weeks duration in the Egyptian desert.

The convoy, which will be manned by the R.A.S.C., is to consist of about eighteen vehicles and will include eight cwt. four-wheeled trucks, thirty cwt. lorries, and three ton four-wheeled lorries, the majority being of British make. The date for the test has been deliberately chosen with a view to affording the most severe conditions.

Those who have been privileged to visit the R.A.S.C. Driving School and to witness the high standard, both of driving and of vehicle maintenance which has been attained there, will appreciate that only the most arduous conditions of ground and weather will have much chance of arresting the march of this convoy.

MOTOR-CYCLE RELIABILITY TRIALS.—In future, the holding of motor-cycle reliability trials and competitions will form a recognized part of military training in the British Army. An Army Motor-Cycling Control Board is being set up under the presidency of Lieutenant-General Sir Reginald S. May—Quartermaster-General to the Forces, with Major-General P. C. S. Hobart—Director of Military Training, and Major-General A. E. Davidson—Director of Mechanization, as vice-presidents. The Board will work on similar lines to the Army Sports Control Board and will draw up rules and regulations for the competition. Civilian experts are being co-opted to help in the organization of the trials.

Three British Army teams—each of three riders—have been entered for the International Six-Days Trial, to be held from 11th to 16th July, with headquarters at Llandrindod Wells. Numerous German entries include four teams for the Adolf Huhnlein Trophy—a prize offered by the German Korpsfuehrer of Sports for competition between teams from recognized organizations.

As a preliminary to the International Trials, an Eastern Command motor-cycle trial was held on 30th June, 1938, in the Wimbledon Common-Box Hill-Chobham Ridges area, during part of which the riders had to wear gas masks.

Only Army machines are to be ridden in these competitions, and officers and other ranks competing will be regarded as on military duty for all purposes, including personal injuries and third-party risks.

TERRITORIAL ARMY

RECRUITING.—The Territorial Army recruiting figures continue to be excellent. During May, 9,572 recruits were obtained, this being the second best for any recruiting month since the War. After deduction of the number of men who had completed their service there was a net increase for the month of 6,058. The Territorial Army has now reached a strength of 181,313 all ranks, against an establishment of 201,707 all ranks.

As a result of the very satisfactory recruiting of recent months, the 1st Anti-Aircraft Division has now reached a figure of 90.6 per cent. of establishment, which compares with 61.2 per cent. six months ago.

The 55th West Lancashire Division has now reached 100 per cent. of its establishment and takes second place to the 51st (Highland) Division, which is now 3.8 per cent. over establishment.

A.A. DEFENCE ORGANIZATION.—Far-reaching changes in the organization of the system of A.A. defence have been announced.

At the War Office, an officer with the status of a Deputy Chief of the Imperial General Staff, and with the rank of Lieutenant-General, is to be appointed as Deputy C.I.G.S. (Anti-Aircraft Defence). He will be responsible—through the Chief of the Imperial General Staff—to the Secretary of State for all matters connected with A.A. defence, and will devote the whole of his time to these duties.

Under the Deputy C.I.G.S. (Anti-Aircraft Defence) a new Director of Anti-Aircraft Training and Organization, with the rank of Major-General, will be appointed.

The existing Territorial Anti-Aircraft formations, with the addition of others to be created, will be formed into five divisions instead of two, as at present. The strength of the personnel will be increased from 43,000 to about 100,000. These five divisions will form a corps under the command of a Lieutenant-General. The Corps Commander will be responsible for training (including administration of his training grant) and for inspection and personal questions. In war, his Headquarters will be adjacent to those of the Air Officer Commanding Fighter Command, R.A.F., to whom he will be responsible for operations.

ANTI-AIRCRAFT DEFENCE.—In view of the controversy that has been raging over the efficiency—or otherwise—of the 3-in. A.A. gun, the remarks of the Secretary of State for War—Mr. Hore-Belisha, to the 193rd A.A. Battery, R.A. (T.A.), on 15th June, 1938, are of considerable importance.

He declared that the 3-in. A.A. gun was the basis of our defence, and that its performance was adequate for its purpose. This gun was being reinforced by a 3.7-in. gun, which was in regular production. There would ultimately be several gradations of A.A. artillery, but this did not imply that each calibre was failing to serve its purpose. In A.A. defence, he affirmed, it was not necessary to have a

"saturation" of guns. The exact number required was based on a calculation of the vulnerable area to be covered—no more, no less.

According to the Press, the 3-in. A.A. gun, which has been completely modernized, has a ceiling of over 15,000 feet combined with a high rate of accurate fire. In view of the cloudy and foggy nature of our climate, enemy aircraft would, it is estimated, rarely be able to exceed this ceiling without losing sight of the target. The 3.7-in. A.A. gun, however, has a far higher ceiling than the 3-in., but its rate of fire is somewhat slower.

INDIA

THE STAFF COLLEGE, QUETTA.—The following changes will be introduced into the training of Staff Officers at the Staff College, Quetta, with effect from January, 1939.

The course at the Staff College, Quetta, will be reduced to one year, and the College—like Camberley—will become a Junior Wing of the Staff College. The Senior Wing is to be opened at Minley Manor, in Hampshire, in 1939. Officers now undergoing their first year's instruction of the present two-year's course will terminate their studies in December, 1938. Annual admissions to Quetta will be increased from 33 officers to 56, of whom 16 will be British Service officers of various arms serving on the Indian Establishment.

Indian Army vacancies will be filled partly by competition and partly by nomination from amongst those who have qualified at the entrance examination. Officers of the Indian Army will no longer attend the junior wing course at Camberley.

The scheme entails a reduction in age at which the candidates will be permitted to attend the entrance examination. The age limit, which now stands at 34 years, will be gradually reduced to 30 in the case of British Service officers, and to 31 in the case of Indian Army officers. Officers of the Indian Army may—subject to the age limit—sit three times for the examination, while British Service officers may take the examination only twice. The latter, however, are eligible to attend the junior course at Camberley also, whereas Indian Army officers are not so entitled.

REORGANIZATION OF COMMANDS.—Widespread changes in the organization of certain commands and districts have been approved. Western Command, it is understood, is to be abolished and will be replaced by Western District, with Headquarters at Quetta. The new district would comprise the same area as that for which the Western Command is now responsible, and would include the Sind (Independent) Brigade Area, which would lose its independent status. This organization would be—in principle—a reversion to that obtaining prior to 1922, when Headquarters, Western Command, were set up at Quetta. Three brigades of covering troops would be formed in the new district with a view to controlling the frontier tribes and covering the mobilization of the field army.

The present Lucknow District (2nd Class) is to be raised to the status of a 1st Class District, and will include the 6th (Lucknow) Infantry Brigade, the 8th (Bareilly) and 9th (Jhansi) Infantry Brigades, and the Allahabad Brigade Area. Lucknow District will thus become the Headquarters of the 3rd Indian Division instead of Meerut District as at present.

Meerut is to be reduced to a 2nd Class District, including the 3rd (Meerut) Cavalry Brigade, the 7th (Dehra Dun) Infantry Brigade and the Delhi Brigade Area, which would no longer be independent.

OFFICERS CHARGERS.—The Defence Department have decided to deal with the question of horses for officers of mechanized units in a broad and generous spirit.

With effect from 1st November, 1938, officers of all mechanized cavalry and artillery units in India will be allowed one charger each plus an additional 50 per cent. for the number of officers on the authorized peace establishment of the unit. Officers—if they wish—may purchase their chargers from the Government at special rates.

These concessions will be welcomed by officers of mechanized units who will now be enabled to keep themselves physically fit and to pursue mounted field sports during the long and trying Indian summer.

FOREIGN

GERMANY

THE TWILIGHT OF THE TANKS.—That the tank is a dwindling force and that the mobile anti-tank gun has already secured the supremacy over the tank is the view expressed by Captain Kormann, of the German Army, writing in the *Militär Wochenschrift*, Nos. 30 and 31, of 1938.

Protagonists of this school of thought aver that the struggle between armour and gun, or missile thrower, is no new thing. In prehistoric times, the savage armed with sword and shield (primitive armour) was able to assure himself of reasonable protection from the stone-slinger or javelin thrower, who might assail him. The development of the longbow, however, releasing an arrow that could penetrate the thickest wearable body armour, turned the scale decisively in favour of the missile thrower. The invention of gun-powder and subsequently of cannon increased the range and effectiveness of the projectile, drove body armour off the field and rendered the defence of castles and walled towns—walls being merely a form of armour—no longer a military proposition.

The armoured tank asserted a temporary superiority over the machine gun and field gun during the period 1917–18 and, during the concluding stages, was probably the fundamental cause of the Allied victory. But this superiority could, in the nature of things, be only fleeting and—given time—it was likely that an efficient A/T gun would develop to counter this new menace.

At sea, gun and armour have developed, as it were, side by side, but there is no question whatever as to which of the two is master. Armour has its place—and a very important place too—in warship design, but no expert naval constructor ever wastes his time in endeavouring to design a navigable ship so thickly armoured as to keep out the direct hit of a heavy shell at short range. For this, he realizes, is impossible.

THE GERMAN DIVISIONAL A/T ORGANIZATION

The German division, according to Captain Kormann, disposes—or will eventually dispose of—the formidable total of one hundred and thirty-five A/T weapons, made up as follows :—

- (a) Thirty-six 1½-in. A/T guns per infantry division (four per battalion).
- (b) The Divisional A/T Regiment, comprising three groups, each of three batteries, each of six guns; total, fifty-four guns.

This proposed regiment, however, exists on paper only, and is far stronger than the actuality. The suggested armament ranges from 2½-in. and 3-in. calibre to 4-in.

(c) The Divisional Anti-Tank Tank Regiment, comprising three companies of fifteen anti-tanks each, each tank being armed with one 2½-in. gun and two automatic (non-A/T) weapons; total A/T weapons, forty-five.

Since a division acting on the defensive in mobile or semi-mobile warfare may reasonably expect to hold not more than 6,000 yards of front, we arrive at the figure of twenty-two A/T guns per 1,000 yards of front to be defended.

Captain Kormann is under no illusions as to the high efficacy of the assailant's supporting artillery fire and estimates that up to 30 per cent. of the defender's A/T weapons may have been knocked out before the tank attack develops, thus reducing the figure of twenty-two to sixteen effective guns per 1,000 yards.

TANK FRONTAGES

The frontages allotted to the tanks vary according to the tactical ideas of the particular General Staffs. For example, in France, a tank battalion (of about fifty tanks) is normally allotted in the attack a frontage of from 700-1,500 yards.

In Russia frontages are considerably less than this, and on manœuvres, on a front of only 1,000 yards, one hundred tanks have been observed advancing in several waves. Taking this latter figure as the most dangerous case for the defending infantry, the author forecasts that some 15 per cent. of the attacking tanks may be put out of action by the defender's supporting artillery. This will reduce the number of tanks effectively attacking on 1,000 yards of front to eighty-five.

The fact that tanks are armed with guns and automatic weapons should not be allowed to obscure the proposition that a tank is essentially a form of mobile armour. The tank armament—being subjected to intense rolling and pitching while in motion—is relatively inefficient over any ground except of the flattest nature and cannot be compared in accuracy with the fire of stationary A/T weapons.

The solution to the problem—according to the author—is to be found in a simple mathematical calculation. He assumes that sixteen A/T weapons are posted some 200 yards in rear of the line of the foremost defended localities, and that their effective range will extend to about 300 yards in advance of these localities.

The eighty-five tanks may be expected to advance at an average speed of 7-8 m.p.h., thus taking about 2½ minutes to cover the 500 yards included in the effective zone of A/T fire. They will probably be disposed in three waves with 200 yards distance between each wave.

EFFICACY OF A/T FIRE

During this period of 2½ minutes, the sixteen A/T guns will deliver about 320 rounds of aimed fire, of which—according to the author—20 per cent. may be expected to register direct hits, resulting in the knocking out of sixty-four tanks, or more than double the number comprising the first wave.

This calculation can also be extended to cover the cases of the second and third waves.

But the reader will not fail to detect serious fallacies in these premises. If sixteen A/T guns are to engage the twenty-eight tanks comprising the first wave—apart from there being more tanks than A/T guns—several guns will, in the confusion of battle, inevitably fire at the same tank, while other tanks will escape being fired at at all. This will result in the penetration of the zone of A/T guns at several points, and may ultimately lead to the collapse of the whole system of defence.

Moreover, the figure of 20 per cent. of direct hits on a moving target under war conditions seems to be unduly optimistic. Such records might possibly be set up on practice ranges under the conditions of peace, but—since the attacker will almost certainly use smoke—this percentage is not likely to be attained on the battle-field.

However, even if the estimated percentage of direct hits be reduced, Captain Kormann's conclusions cannot fail to be highly disquieting to the out-and-out advocates of tank warfare. The author may not have established, to our full satisfaction, the truth of his proposition that the gun will inevitably beat the tank, but he has written enough to show that with the development of the A/T gun, the tank has to reckon with a new and most formidable opponent.

AIR NOTES

ROYAL AIR FORCE

AIR MINISTRY

The Right Honourable Sir Kingsley Wood, M.P., has been appointed to the office of Secretary of State for Air in succession to the Rt. Hon. Viscount Swinton, G.B.E., M.C.

PROMOTIONS

The under-mentioned promotions were made with effect from 1st July, 1938 :—
AIR COMMODORE TO BE AIR VICE-MARSHAL.—P. C. Maltby, D.S.O.

GROUP CAPTAINS TO BE AIR COMMODORES.—F. P. Don, R. G. Parry, D.S.O., C. C. Darley, G. B. Dacre, D.S.O. (Acting Air Commodore), M. Henderson, D.S.O., K. R. Park, D. G. Donald.

WING COMMANDERS TO BE GROUP CAPTAINS.—The Hon. R. A. Cochrane, A.F.C. (Acting Group Captain), J. B. Cole-Hamilton, A. D. Prior, E. B. Rice, R. G. Gardner, R. Halley, W. A. Coryton, M.V.O. (Acting Group Captain), F. W. Trott, C. B. Dalison, W. S. Caster, W. H. Dunn, H. H. MacL. Fraser, M. Thomas, R. B. Mansell, M. L. Taylor, H. A. Whistler, D.S.O., M. B. Frew, D.S.O., E. G. Hopcraft, H. Leedham.

HONOURS AND AWARDS

The King has been graciously pleased to approve the following awards :—

D.S.O.—Squadron Leader E. R. C. Hobson, D.F.C.

D.F.M.—No. 562564 Sergeant G. Kennedy.

APPOINTMENTS

The following appointments have taken effect from the dates shown :—

AIR VICE-MARSHALS.—H. R. Nicholl, C.B.E., to Headquarters, R.A.F. Middle East, Cairo, as Air Officer Commanding, to date 27th March; C. T. Maclean, C.B., D.S.O., M.C., to Headquarters, No. 2 (Bomber) Group, Wyton, as Air Officer Commanding, to date 25th May.

AIR COMMODORE.—A. G. R. Garrod, O.B.E., M.C., D.F.C., to Air Ministry, as Director of Equipment, to date 31st March; C. H. B. Blount, O.B.E., M.C., to Headquarters, No. 4 (Bomber) Group, Linton-on-Ouse, as Air Officer Commanding, to date 8th June.

GROUP CAPTAINS.—J. O. Andrews, D.S.O., M.C., to Headquarters, R.A.F. Far East, Singapore, as Senior Air Staff Officer, to date 19th March; C. W. Mackey, to Headquarters, No. 6 (Auxiliary) Group, London, as Senior Air Staff Officer, to date 21st March; J. C. Russell, D.S.O., to R.A.F. Station, Thorney Island, in command, to date 23rd March; E. O. Grenfell, M.C., D.F.C., A.F.C., to R.A.F. Station,

Thornaby, in command, to date 12th May; F. H. Coleman, D.S.O., to R.A.F. Station, Mildenhall, in command, to date 5th May; G. C. Bailey, D.S.O., to Headquarters, Maintenance Command, London, for Staff Duties, to date 16th May; H. K. Thorold, D.S.C., D.F.C., A.F.C., to Directorate of Equipment, Air Ministry, to date 16th May; F. Sowrey, D.S.O., M.C., A.F.C., to R.A.F. Station, Tangmere, in command, to date 9th June.

ROYAL AIR FORCE EXPANSION

The following is a summary of the progress made under the expansion of the Royal Air Force since the decision to expand was announced in May, 1935:—

- (a) *New Stations*.—Thirty-two new stations have been opened, and a further twenty-seven sites have been selected.
- (b) *Recruiting*.—Since 1st April, 1935, approximately 4,805 pilots have been selected for the Royal Air Force. The number of airmen entered since the same date totals 35,577. In addition, there are 5,538 aircraft apprentices and boy entrants at Cranwell, Halton and elsewhere.

ORGANIZATION

NEW FORMATIONS.—The following were formed, or will form, on the dates shown:—

Maintenance Command, on 1st April, and temporarily located in the Air Ministry. This Command will be responsible for meeting the maintenance requirements of the Royal Air Force in the United Kingdom and for the despatch of equipment required by the overseas commands.

Station Headquarters, Leuchars, on 1st August, and transferred from the Training Command to the Coastal Command and placed in No. 16 (Reconnaissance) Group with effect from 26th August.

No. 85 (Fighter) Squadron, at Debden on 1st June, and placed in the Fighter Command in No. 11 (Fighter) Group.

Nos. 106 (Bomber) and 185 (Bomber) Squadrons, at Abingdon on 1st June, and placed in the Bomber Command in No. 1 (Bomber) Group.

No. 150 (Bomber) Squadron, at Usworth, on 8th August, and placed in No. 1 (Bomber) Group.

Station Flight, Wyton, on 1st May.

No. 21 Maintenance Unit, at Fauld, on 1st June, and placed in No. 24 (Training) Group.

No. 5 Maintenance Unit, at Kemble, on 22nd June, and placed in Training Command in No. 24 (Training) Group.

No. 2 Air Armament School, at Eastchurch on 1st July, and placed in No. 25 (Armament) Group.

No. 4 School of Technical Training, at St. Athan, on 1st September.

Elementary and Reserve Flying Training Schools. No. 25, at Grimsby, on 24th June; No. 26, at Oxford, on 24th June; No. 27, at Tollerton, on 24th June; No. 28, at Meir, on 1st August.

Air Observers' School (temporary), at Leconfield, on 7th June.

Balloon Barrage Units, Auxiliary Air Force. Nos. 901, 902 and 903 Squadrons, at London, on 16th May; No. 904 Squadron, for recruiting purposes only, on 16th May, and later to be based at Hook, Surrey; No. 907 Squadron, for recruiting

purposes only, on 16th May, and later to be based at Stanmore, Middlesex ; No. 909 Squadron, for recruiting purposes only, on 16th May, and later to be based at Chigwell, Essex.

TRANSFERS.—Headquarters, Royal Air Force, India, from New Delhi to Simla, on 19th April.

R.A.F. Station, Donibristle, within the Coastal Command, from No. 16 (Reconnaissance) Group to No. 17 (Training) Group, on 1st April.

Headquarters, No. 2 (Bomber) Group, from Andover to Wyton, on 2nd May.

Headquarters, No. 1 Anti-Aircraft Co-operation Unit, from Biggin Hill to Farnborough and transferred from No. 11 (Fighter) Group to No. 22 (Army Co-operation) Group, on 10th April.

No. 88 (Bomber) Squadron from No. 4 (Bomber) Group to No. 1 (Bomber) Group, on 15th April.

No. 6 F.T.S. from Netheravon to Little Rissington, on 26th August.

No. 34 (Bomber) Squadron, from Lympne to Upper Heyford, on 11th July.

No. 21 (Bomber) Squadron, from Lympne to Eastchurch, on 15th August.

No. 1 F.T.S., from Leuchars to Netheravon, on 26th August.

No. 233 (G.R.) Squadron, from Thornaby to Leuchars, on 1st September.

No. 224 (G.R.) Squadron, from Thornaby to Leuchars, on 1st September.

No. 106 (Bomber) Squadron, from Abingdon to Thornaby, on 1st September, and transferred to No. 5 (Bomber) Group.

No. 185 (Bomber) Squadron, from Abingdon to Thornaby, on 1st September, and transferred to No. 5 (Bomber) Group.

No. 48 (G.R.) Squadron, from Manston to Eastchurch, on 1st September, and transferred to Coastal Command No. 16 (Reconnaissance) Group.

NEW TITLES.—R.A.F. Station, Dhibban, was re-named R.A.F. Station, Habbaniya on 1st May.

The title "Armament Training Camp" was changed to "Armament Training Station" on 1st April.

The service aerodrome at Woodsford was renamed "Warmwell" on 1st July, to avoid confusion with the civil aerodrome at Woodford.

PERSONNEL

ATTACHMENTS OF FOREIGN OFFICERS FOR COURSES.—Captain Harold Norman and Lieutenant Halfden Hansen, Royal Norwegian Air Force, were attached to the Central Flying School, Upavon, from 30th March ; Commanders G. H. A. Wendelbo and E. Manshaus, Royal Norwegian Navy Air Service, were attached to the Central Flying School, Upavon, from 8th April ; Lieutenant Kriangkrai Inkavanij, Siamese Air Force, was attached to the Civil Flying School, White Waltham, from 4th April ; Lieutenant A. R. Costa and 2nd Lieutenant R. P. de O. Sexais, Portuguese Air Force to No. 2 F.T.S., Brize Norton, from 7th June ; Lieutenant J. J. R. Ferreira and 2nd Lieutenant J. B. Paiva, Portuguese Air Force to No. 6 F.T.S., Netheravon, from 7th June ; Flying Lieutenant A. R. Vaccari, Argentine Navy, to R.A.F. Station, Abingdon, from 7th June.

ROYAL AIR FORCE VOLUNTEER RESERVE

Flying training is now in operation at twenty-two aerodromes, and negotiations are in progress with a view to increasing the number of centres during the present year.

GENERAL

EMPIRE AIR DAY.—The public interest in Royal Air Force activities was well demonstrated when, in spite of the inclement weather, a record number of visitors was present at the stations open to the public on 28th May, when the fifth Empire Air Day was held. Official reports show that the total attendance exceeded 421,000, as compared with 353,000 a year ago, and the net takings amounted to £18,000 against £14,000. The returns from civil aerodromes which participated are not yet complete, but it is estimated that the final figures will show a total attendance of over 500,000 at service and civil aerodromes, and that Royal Air Force charities will benefit to a larger extent than hitherto from Empire Air Day visitors.

INTERNATIONAL ALTITUDE RECORD

The Fédération Aéronautique Internationale have accepted as an official international altitude record the flight of Flight Lieutenant M. J. Adam on 30th June, 1937, when a height of 16,440 metres was attained.

OVERSEAS COMMANDS

FLIGHTS

FLIGHT ROUND AUSTRALIA.—The five Londons of No. 204 (G.R.) Squadron, referred to in the last Notes, completed the return flight from Australia on 29th May, when they arrived at Mount Batten.

INDIA TO EGYPT.—Twelve Hart Aircraft of No. 11 (B) Squadron, accompanied by a Valentia aircraft of the Bomber Transport Flight (India), carried out an inter-command flight to Egypt during April. The aircraft left Risalpur on 10th April, arriving back on 26th April. In each direction, the itinerary was via Palestine and Iraq.

ADEN

During the period covered by these notes there have been two occasions on which air action has been taken against tribesmen in Aden, namely, against the Hamumi tribe during February, and against the Mansuris in April last.

HAMUMI OPERATIONS.—The Hamumi tribe is a confederation of some ten small sections, occupying an area in the Eastern Aden Protectorate, north of Shahr and east of the Tarim road. Towards the end of January this tribe attacked traffic on the new motor road between Tarim and Shahr, looted caravans and killed two men, one of whom was a local Governor. The leaders of the tribe were summoned to Mukalla on the 6th of February to answer the charges against them, but they failed to appear, and the usual ultimatum was issued demanding the payment of a fine and the surrender of rifles and camels. The ultimatum, however, did not have the desired effect, and on the 15th February air action was taken after the issue of the customary warning notices. Two of the ten guilty sub-sections submitted at once, but the remainder held out until 28th February, when the operations were brought to a successful conclusion, the loot being restored and the criminals from all sections being handed over as hostages until the prescribed fine was paid.

Although these operations occupied a period of fifteen days and involved some fifty-four aircraft raids under difficult conditions, no casualties were sustained by either side.

The Shahr-Tarim road was reopened early in March, and the Hamumis were allowed to visit their normal markets and ports from which they had been banned whilst the operations were in progress.

MANSURI OPERATIONS.—The recent minor operations against the Mansuris were the outcome of an incident on the road between Mafalis (Yemen) and Aden where cars and lorries had been stopped and money extorted from passengers. Air action was again found to be necessary following the failure of the chief offenders to appear at Lahej to answer charges against them. Bombing took place on the 29th April, and on the 30th the Mansuri Sheikh made complete submission and undertook responsibility for the future good behaviour of his tribesmen. This operation was brought to a successful conclusion without any casualties, and the political results have been most satisfactory.

One of the first effects of the Yafai-Fadhli truce referred to in the last Notes was the opening of the Bir Awadain Route on the 1st April to Yafai caravans.

INDIA

WAZIRISTAN SITUATION.—The Madda Khel tribe having failed to control the Fakir of Ipi or to put a stop to his intensive propaganda against the Government, orders were issued to the tribe either to evict him or to produce satisfactory guarantees for his future good behaviour. Following the summoning of the tribe to a *jirga* held at Miranshah on the 1st March, the Government were forced to employ air action against four of the Madda Khel villages as a punishment for the tribe's failure to comply with the Government orders. Air action was, however, discontinued pending compliance with further terms which were issued to the tribe.

During April the centre of interest changed temporarily from North to South Waziristan following an attack on the South Waziristan Scouts on the 14th April, which was doubtless staged by Mullah Sher Ali who had recently been in close touch with the Fakir of Ipi. As a result of this attack air action was taken against the responsible tribe, the Mahlolzai Mahsuds, in the valleys of Spli Toi, Baddar Algad, and Main Toi. Damages to villages by heavy and incendiary bombs, together with the exclusion of the tribesmen from their grazing grounds at this season of the year, is having a cumulative effect and may induce them to submit fully to the Government's terms at an early date.

There was a general increase in outrages during April, sniping of posts and pickets and the mining of roads have continued unabated, whilst the most recent type of outrage has been the contamination of water reservoirs. This increase, however, may only be a temporary deterioration of the situation expected at this time of the year.

TROOP-CARRYING AND TRANSPORTATION OF SUPPLIES.—Owing to the possibility of reprisals by gangs from the prescribed areas the Jandola-Wana road has been temporarily closed to both Government and Mahsud convoys. An aircraft of the Bomber Transport flight was based at Manzai to carry out certain urgent troop reliefs by air. On the 27th and 28th April eight return trips between Manzai and Wana carried a total of 294 troops and 12,494 lbs. of supplies and kit.

FORMATION OF AIR FORCE STATION, AMBALA.—The Air Force Station, Ambala, formed on the 1st April, 1938, and comprises station headquarters with No. 28 (A.C.) Squadron R.A.F., No. 1 Squadron Indian Air Force and Central Wireless Station, under its command. "A" and "B" Flights of No. 1 Squadron Indian Air Force will shortly move to Ambala from Peshawar and Drigh Road respectively. Head-

quarters No. 1 Squadron and "C" Flight, Indian Air Force, will move in October, 1938.

PALESTINE

There has been a general deterioration of the situation in Palestine during the past three months with the presence of large armed gangs in the hill districts. Murder, terrorism and sabotage have continued unabated. Aircraft and armoured cars continue to co-operate with ground forces in the location and dispersal of armed bands, and numerous engagements have taken place. The most important of these took place on the 4th March between troops and aircraft, and a large armed band estimated at between 200 and 400 strong near Yamun in the Jenin district, and resulted in the heaviest and most costly defeat yet inflicted on the rebels. This engagement was followed by successful military operations against bands in Northern Galilee from the 8th to 11th March, and the two operations have resulted in the dispersal of large concentrations of armed bands.

SUPPLY DROPPING.—On the 2nd March three aircraft of No. 14 (B) Squadron dropped supplies on a stranded Army Unit at Raba in Palestine. Further supplies were also dropped on the 3rd March in the same locality.

FOREIGN

ARGENTINA

VISIT OF U.S. BOMBER SQUADRON TO BUENOS AIRES.—A most successful goodwill flight was recently carried out by six Boeing B.17 bombers carrying a total of 18 officers and 31 enlisted men. The aircraft left Miami, Florida, early on the morning of the 17th February and flew a distance of 2,695 miles non-stop to Lima, Peru, in 15½ hours. After a six-hour stop at Lima, five of the bombers took off for Buenos Aires, the sixth which followed a few hours later, being delayed on account of a minor airscrew defect. During the flight from Lima to Buenos Aires heights of over 24,000 feet were reached. The rapidity of this flying visit, the size and design of the aircraft and the evident efficiency of the personnel received most favourable comment in the local Press, and will do much to confirm and strengthen the prestige of the U.S. Air Force. The Squadron left Buenos Aires on the 22nd February and made three stops on the return to its base at Langley Field which it reached on the 27th February. The 2,170 mile flight from France Field (Canal Zone) to Langley Field was made at an average speed of 204 miles an hour.

BULGARIA

APPOINTMENT OF BULGARIAN AIR ATTACHE.—Commandant P. Vassilev has been appointed Air Attaché to the Bulgarian Legation in London. In the past the duties of Air Attaché have been carried out by the Military Attaché.

CHINA

SINO-JAPANESE HOSTILITIES.—The operations of the Japanese land forces leading to the capture of Suchow on the Lunghai railway were strongly supported by air action. The railway junction at Suchow was heavily bombed, and it appears that the Chinese were forced to leave behind a considerable quantity of rolling stock and war material when they began their retreat. The retreating troops were also attacked from the air. The Chinese do not seem to have disputed the Japanese air superiority in the Lunghai area.

In Central China, the Japanese have mostly bombed Chinese aerodromes, especially that at Hankow. On two occasions, however, large formations of Japanese bombers escorted by fighters were intercepted by Chinese fighters which inflicted heavy casualties on the raiders. The Chinese also made a rather remarkable flight to the island Kyushu (the southernmost island of the Japanese group) and dropped pamphlets advising the Japanese people to overthrow their military autocracy. This raid was a complete surprise, and met with no opposition.

In South China the Japanese have kept up constant air attacks on the Kowloon-Canton and Canton-Hankow railways with the object of stopping war material from reaching the Chinese forces by this route. Lately, however, these attacks have been concentrated on Canton itself, and the civilian population there has suffered severely.

CZECHOSLOVAKIA

DEFENCE PLANS.—Prior to the German occupation of Austria the Chief of the Czechoslovak General Staff made an announcement concerning the country's defence plans.

Czechoslovakia, he said, must be prepared to meet a sudden and violent attack by high-speed motorized units, supported by heavy attacks from the air. This would be delivered without any declaration of war, and would be aimed at paralysing points essential to mobilization. Czechoslovakia, he added, must reckon on having to stand quite alone in the critical first days of the attack. She would have to carry through her mobilization without the active help of her allies, owing to the distance which separates them. To this end her Maginot line of fortresses has been erected. The question had been first studied in 1935, and satisfactory progress had been made in fortification construction.

The Chief of Staff said that departments of the Skoda works in Pilsen were being gradually transferred to less vulnerable places. Czechoslovakia, which had no aircraft industry in 1918, now has eight large factories.

DENMARK

PURCHASE OF AIRCRAFT.—A commission is to be sent from Denmark in the near future to visit Britain, Germany, Holland and Italy in order to study the various types of aircraft in these countries which might be suitable for Danish requirements.

FRANCE

FUNCTIONS AND RE-ORGANIZATION OF THE AIR COUNCIL.—A decree dated 22nd February, 1938, lays down that it is now obligatory for the Air Council to be consulted on essential problems concerning :—

The defence of the territory against air attack ;

Participation of the Air Force in military and naval operations ;

The organization and equipment of the Air Force in peace and war ;

Methods of recruiting and the general methods of instruction and training of Air Force personnel ;

The fighting tactics of the Air Forces ;

The drawing up of programmes for material ;

The placing of new material in commission in the units ;

The organization of essential ground installations.

In order to obviate the difficulties in organizing the frequent meetings thus rendered essential, and as the discussion of the majority of these problems is exclusively within the competency of high military authorities, it has been found advisable to have only military members on the Council, which is now to consist of the Air Minister as President, the Chief of the General Staff of the Air Force as Vice-President, and a maximum of five generals.

The Technical Inspector-General and the Director of Military Material, hitherto civilian appointments, are therefore no longer *ex-officio* members of the Council. Should, however, a serving general hold the appointment of Technical Inspector-General he may be included in the Council, as is General Fequant in the present instance.

RECORD PARACHUTE DESCENT.—The parachute-jumper James Williams has long intended to break the free fall record set up by a Russian experimenter, which consisted in a drop of 7,900 metres in 2 minutes 29 seconds. After long and meticulous preparation he carried out, on 2nd March, 1938, a preliminary drop of about 6,000 metres, and the following day jumped from a height of 8,400 metres, falling 8,000 metres in 2 minutes 20 seconds, and only opening his parachute when he was about 400 metres above the ground.

AVIATION POPULAIRE.—The *Aviation Populaire*, which provides pre-military training for large numbers of Air Force pilots and forms a potential reserve of civilians trained as pilots, is showing a steady increase, and 190 Popular Aviation Sections have now been formed as against 156 existing in October, 1937.

Approximately 1,100 flying certificates were issued in 1937 to members of this movement who are all under 21 years of age.

GERMANY

AIR ATTACHE.—Major-General Wenninger, German Air Attaché in London, has been promoted Lieutenant-General.

GERMAN AIR MINISTRY—REORGANIZATION.—Staatssekretär General der Flieger Milch is now officially Deputy of the Air Ministry and to Commander-in-Chief Generalfeldmarschall Goering, and as such is superior to the Chief of the Air Staff and the three Group Commanders. At the same time the departments of Administration, Equipment and Civil Aviation have been made subordinate to the Chief of Air Defence, who was until recently responsible only for A.A. Artillery.

THE AUSTRIAN AIR FORCE.—The incorporation of the Austrian Air Force in the German Air Force was effected on 13th March. Major-General Loehr, the former Chief of the Austrian Air Force, proceeded to Berlin, where he was warmly welcomed, promoted to Lieutenant-General, and appointed Commanding General of the Air Force in the Ostmark. German Air Force colours have also been presented to certain former Austrian units.

The Austrian Air Force, though reasonably efficient, was very small, and the actual accession of strength to the German Air Force from this move is negligible. Many of its aircraft were of Italian manufacture and, presumably, will be retained for training purposes only. No indication has yet been received of the organization of the force under Lieutenant-General Loehr's command.

NEW HEINKEL SEAPLANE.—On the 20th March a Heinkel seaplane, fitted with two B.M.W. 132 engines, broke a number of world's records in certain classes; the records have since been beaten by an Italian seaplane. The seaplane differs somewhat from previous Heinkel designs in being a high-wing monoplane; the character-

istic Heinkel wing form has also disappeared, there being no bend in the spars at the wing-root, and the leading and trailing edges are practically straight throughout their length. This type is probably intended as a replacement for the obsolescent He. 59 Reconnaissance—Torpedo-Bomber; its type number has not yet been made known.

NEW GERMAN AIR FORCE AERODROME IN AUSTRIA.—The German Press reported that during Generalfeldmarschall Goering's recent visit to Austria he founded the site of two new aerodromes for the German Air Force.

One of these is to be situated at Schwechat, a small town 10 kilometres S.E. of Vienna. The other is to be constructed on the Kuniglberg, in Heiting, some 15 kilometres west of Vienna.

ITALY

ROME CELEBRATIONS.—The fifteenth annual celebration of the founding in its present form of the Fascist Air Force was celebrated in Rome on 28th March. Signor Mussolini gave medals to airmen or their families, chiefly in connection with exploits in Ethiopia and Spain.

AIR DISPLAY IN HONOUR OF HERR HITLER.—The visit of Hitler to Rome at the beginning of May was made the occasion of large demonstrations by the Italian Air Force at Furbara. Owing to unfavourable weather conditions the display was postponed for a day, and actually took place on the 8th May. Apart from a display of aerobatics given by a fighter group, the programme consisted of a series of attacks against an imaginary port and two old coastal steamers of about 800 tons anchored a short way from the coast.

The Air Attaché reported that the flying in all these evolutions was of an exceedingly high standard.

RECORD FLIGHT.—According to an official *communiqué* the Italian pilot Mario Stoppani, with a second pilot and two other members of the crew, has regained for Italy the international record for seaplanes over a course of 620 miles and 1,240 miles with useful loads of 4,400 lb., 2,200 lb. and without useful load. The flight was carried out over the closed circuit Santa Marinella-Naples (Vesuvius)-Monte Cavo-Marinella, and the seaplane took off from Vigna di Valle.

FLYING IN ETHIOPIA.—It is stated that the following figures represent the activity of the Air Force in Ethiopia during the period 29th March, 1937, to 28th March, 1938:—

Flights carried out	11,478
Actual flying hours	23,239
Material transported by air (tons)	2,500
Passengers carried by air	9,505
Miles flown	2,500,000

JAPAN

LONG-DISTANCE FLIGHT.—A Japanese aircraft, specially designed by the Aeronautical Research Institute of Tokyo Imperial University for long-distance flights, set up a new record for a closed circuit on 10th-12th May by flying a distance of 7,200 miles without refuelling. According to Press reports, an attempt on the long-distance record in a straight line will be made shortly in the same aircraft, which is a low-wing monoplane carrying a crew of three.

NORWAY

REORGANIZATION OF THE AIR FORCES.—General Laake, in a Press interview, stated that Parliament may be expected to deal with the proposed reorganization of the Air Forces before the autumn recess.

A majority report has recommended that the Naval Air Force should retain its own organization while all other air defence should be united under one command, the Air Arm, under the Inspector-General of Flying.

Considerable expenditure will be necessary, as it is not only a question of new aircraft and anti-aircraft batteries, but also the building of army aerodromes and the provision of a large amount of ground organization. In addition there will be large requirements for increased exercises, training, schools, courses and increased personnel establishment.

NEW CHIEF OF THE NAVAL AIR FORCE.—Captain F. Lutzow-Holm, who was appointed Chief of the Naval Air Force as from 6th May, has been an active aviator since 1916 and has been connected with the Naval Air Force from its inception. Despite his having lost a leg in 1935 when he crashed while trying a Breda machine in Italy, he is still an active pilot. He possesses great technical knowledge, having been connected with the Naval Aircraft Factory at Horten for many years, frequently visiting foreign countries to study new models.

SOVIET UNION

AIRSHIPS.—According to the Soviet Press, a new airship—the V.9, is nearing completion. It is of the semi-rigid type to accommodate thirty passengers, and will be used on the Moscow-Novosibirsk route. This distance is 2,175 miles, and it is estimated that the journey will be covered in 30 to 50 hours with no intermediate stops. The gondola consists of two compartments, one for the crew and one for passengers. The Soviet authorities anticipate that the airship will be flying towards the latter part of this year.

The Press also reports that construction has now begun on a further airship, the V.11, which is to have a capacity of 30,000 cubic metres and is to cruise at 85 miles per hour.

REVIEWS OF BOOKS

GENERAL

Colonial Blockade and Neutral Rights, 1739-1763. By Richard Pares.
(Clarendon Press). 21s. net.

Mr. Pares's book is a study of the development of prize law during the period of the two great "colonial" wars which took place within the period of his survey. It is not, as he reminds his readers, a general history of prize law: it concentrates attention upon the two great extensions that came into existence—the doctrines of the Rule of War of 1756 and "continuous voyage." Thus the book deals largely with the working of the prize courts and, since many of the difficulties of Government arose out of the action of privateering vessels, it relates the practices and mal-practices of those auxiliaries.

Matter regarding prize courts is primarily of a legal nature. The fighting services are concerned less with the court procedures than with the effects of the decisions upon the course of a war: and privateering "is and remains abolished." But this in no sense detracts from the military value of these studies, for if the study of past wars is a true foundation of a knowledge of strategy, it is insufficient merely to have before us the purely military dispositions, movements and battles. We need also to understand to what extent the country was hampered in exercising the power at sea which its naval victories enabled it to exercise, and why it was prevented on various occasions from reaping the full fruits of its naval victories.

Mr. Pares brings out clearly the difficulties with which British Ministers were faced in those wars. They were trying to bring pressure upon their enemies through cutting off their trade, and to weaken their power of resistance at sea by stopping their supplies or naval stores, in particular all that related to the propulsion of ships—masts, spars, hemp and canvas. The country was, as it had been in Elizabeth's time and was again to be in 1914, in a dilemma. On the one hand, if Britain acceded to the pressure of the neutral with his still novel demand for "free ships, free goods"—a doctrine unheard of before the middle of the XIXth Century—she would be unable to bring pressure on the enemy by stopping his commerce or to prevent him from receiving those contraband goods with which he equipped his fleets. On the other, if she persisted in her rights, she risked adding those neutrals to her enemies or being forced to take steps against armed protection, the result of which would be war. Armed neutrality, so-called, was organized against her in 1756; and the hollowness and the appeals to ethics and high principles is amply demonstrated by the behaviour of those same neutrals when they, in their turn were belligerents. The same Powers who had protested most strongly against British practices in regard to visit and search, to the application of contraband and various other measures no sooner found it to their interest, when allied to Great Britain, to restrict the trade of the common enemy, than they pressed for the use of all those measures they had condemned as illegal when they were neutrals.

The book is a mine of information, amply documented. It is no exaggeration to say that it throws new light upon the development of problems which have been of cardinal importance in the history of English sea power.

Glass Houses and Modern War. By Jonathan Griffin. (Chatto and Windus). 3s. 6d.

If Mr. Griffin is "all at sea" in some of his allusions to naval affairs, and has fallen a victim to the notorious inaccuracies of Mr. Lloyd George in the matter of the introduction of the convoy system in the late war, nevertheless the general theme of his little book and his arguments in presenting it have much to commend them.

Broadly, he advocates building up our defences on a policy of "the reduction of vulnerability," primarily because that would be non-provocative and, what is more to the point, because it would be the most serious deterrent against attack from the air. In this connection, he points out that the people of this country have hitherto enjoyed immunity from conscription in peacetime because the natural defence of the sea has given us time to marshal our reserves and so win a long war; but it is highly probable that time will not be on our side in the next war, and unless we are well prepared to resist the enemy's initial onslaughts, we may be overwhelmed before we can organize our counter-attack.

To this end he advocates two main projects: (1) that we should modify our policy of carrying air warfare into the enemy's country with a bomber force "second to none," and concentrate on our own air defences by greatly increasing the number of our fighter aircraft, anti-aircraft guns and balloon barrages, and by devoting far more attention to our Air Raid Precautions; (2) that we should balance the increased vulnerability of shipping and lighten the burden which a future war must impose on the Navy by storing food in large quantities.

The first is to a large extent a reversal of the present official policy: the author advocates that, instead of the proportion of bombers to fighters being 2 to 1, it should be just the opposite. In the light of the many forceful arguments contained in this book, the case for the fighter certainly seems to call for enquiry.

As regards the second, the Government set up a Food (Defence Plans) Department within the Board of Trade at the end of 1936. This co-operates with the Minister for the Co-ordination of Defence as chairman of the Sub-Committee of the Committee of Imperial Defence on Food Supplies in Time of War in planning for the supply, control, and distribution of food and feeding stuffs for defence purposes. The whole question of measures tending to make this country more self-contained in the matter of food is, however, complicated by our economic relations with other countries, especially the Dominions, and it is not merely a matter of spending so much on the most essential commodities and putting them in cold storage until we want them.

The author treats these and other subjects of vital importance to our readiness for war in a live and thought-provoking manner, and his book can be recommended—not as an authority, but as a stimulant to mental exercise.

If War Comes. By Major R. Ernest Dupuy and Major G. F. Eliot, U.S. Army. (The MacMillan Company, New York). 12s. 6d.

This is quite a well-compiled, if necessarily somewhat superficial treatise of the potential causes of war in the present day, the nature and uses of modern weapons, and the probable courses of future conflicts.

The authors see in Spain one of the most likely causes of a European war; but they give credence to Press reports of foreign intervention which seem to go far beyond the true facts of the situation; an "apparently authenticated report" from Paris is quoted as saying that the Germans have established submarine and air bases

at Melilla and Alhucemas on the Mediterranean coast of Spanish Morocco ; at Ceuta . . . ; at Larache and Ifri on the Atlantic coast ; and in the Canary islands." If this were indeed the case, it would be remarkable if the European conflagration were not already raging.

In discussing "new and fearsome weapons," some of Mr. Winston Churchill's flights of fancy are quoted as if, because they come from a late First Lord, Home Secretary, etc., etc., they must be regarded as scientific facts, whereas we know that powers of imagination and the invention of notions are the stock-in-trade of the politician and journalist who desires to keep in the limelight.

In fact, Service writers, whether here or amongst our cousins on the other side of the Atlantic, should not base serious professional works on the effusions of the Press or the politician. When the present authors get free of these trammels and rely on their own technical knowledge and expert viewpoint, they are on safer ground. There is nothing very new in the chapters on "What about the Air" and "What will War be Like"—on Land, and on Sea ; but if they and others are somewhat platitudeous to the more advanced student they may yet offer germs of wisdom to the novice ; and it is to the latter rather than to the former that this work may prove useful.

NAVAL

The Barrington Papers, from the Letters and Papers of Admiral the Hon.

Samuel Barrington. Edited by D. Bonner Smith, Vol. I. (Navy Records Society, 1937).

Admiral the Hon. Samuel Barrington is one of the figures who have played an important part in the Navy, though denied by fortune the opportunity of flying the flag of Commander-in-Chief in time of war. Such were Sir Geoffrey Hornby, Sir George Tryon and Sir Arthur Wilson in our time, and such was Samuel Barrington in his. With Kempfelt and Howe he shares the reputation of being one of the ablest tacticians of his day, a reputation tried and proved when he outmanœuvred D'Estaing at St. Lucia in December, 1778. With Howe and Hood he was one of the Flag Officers of the fleet which put to sea in 1790 on the occasion of the dispute with Spain over Nootka Sound, when Jervis—his close friend, served with him for a time as his Captain of the Fleet. It was only a breakdown in health which precluded his being appointed to high command in 1793.

In his papers can be discerned his attention to detail and his interest in tactics which led him to preserve all the Additional Fighting Instructions issued to him from time to time.

This is one of the special features of this volume, converting it into an interesting and indispensable supplement to Sir Julian Corbett's volume of Fighting Instructions published by the Navy Records Society in 1905. Barrington's papers show clearly that it was the practice in the XVIIIth Century for every Flag Officer or senior naval officer to issue Additional Instructions on assuming his command, and the instructions contained in Mr. Bonner Smith's volume add greatly to our knowledge of tactical organization in the Seven Years War. From them we learn that Boscawen's important set of instructions, which Sir Julian Corbett dated in 1759, was issued to Barrington as early as August, 1755, before the Seven Years War had begun. Anson's instructions which Sir Julian dated "about 1747" were not issued to Barrington till 7th July, 1759, while Hawke's are dated 20th July, 1759. In addition to these important issues, which were all that was previously known of the Seven Years War, the Barrington papers provide us with a number of others,

pointing the way to a revision and new edition of Sir Julian Corbett's valuable work, which is now out of print.

From these papers we learn that on 12th June, 1758, Anson ordered ships of the White Squadron to wear Red Ensigns, "the better to distinguish them from ships flying the Bourbon flag," reminding us of the Admiralty order of November, 1914, that Red Ensigns were to be flown on or near the foremast in order to avoid confusion with the enemy.

Barrington was the fifth son of John, Viscount Barrington, who was created an Irish peer in 1720 and died in 1734. He entered the Navy in 1740 under the auspices of Lord George Graham; he was in the "Feversham" in Matthews' action off Toulon on 20th September, 1744, and passed his examination for Lieutenant shortly afterwards. His brother William, Viscount Barrington, was a Lord Commissioner of the Admiralty from 1747 to 1753, and a Member of Parliament for Plymouth. Barrington was in the "Norwich" (50 guns) in 1755, and sailed for Halifax to join Boscawen's squadron there. It was Barrington's ship, the "Achilles" (60 guns), which carried Brigadier-General Lambert in the expedition against Belle Ile under Commodore Keppel in 1761, though he unfortunately missed the Battle of Quiberon Bay in 1759.

In 1767, when H.R.H. the Duke of York and Albany died (his body was brought home and landed at Greenwich and was given a naval funeral with eight Admirals including Sir Edward Hawke and Sir George Rodney holding the canopy), it was decided that Henry, H.R.H. Duke of Cumberland, the King's youngest brother should enter the Navy, and the fact that Captain Barrington was selected as his tutor, indicates the esteem in which he was held by King George the Third. Two years later, on 15th June, 1769, H.R.H. the Duke of Cumberland hoisted his flag in the "Venus" in command of a squadron, with Captain Barrington as his Flag Captain, and a very interesting set of Additional Signals (never printed before), presumably compiled by Barrington, was issued in August, 1769, in H.R.H.'s name. Prince Henry, however, decided to give up the sea, and in June, 1770, the "Venus" was paid off. It was in that year that Barrington commenced a friendship with Jervis which was to last all their lives and had much to do with the maintenance of a fine spirit in the Navy in the difficult times to come. They visited St. Petersburg together in 1774, and the coast of France in 1775. Barrington was appointed to the "Prince of Wales" in 1776, and was evidently conscious of his claims to command, for in November, 1777, he wrote to the Earl of Sandwich, then First Lord, that he would consider himself "excessively ill-treated" if the Leeward Islands or any other command were given to an officer junior to himself. The war with France was then on the horizon, and the next Volume will presumably contain the interesting papers dealing with his command in the West Indies at that time.

This volume is valuable as presenting a collection of a Post Captain's letters and orders in the XVIIIth Century covering a variety of services, ranging from attendance on the garrison of Gibraltar to a careful inspection of the forts on the Guinea coast. Mr. D. Bonner Smith, the Editor, deserves the thanks of all who are interested in the history and traditions of the Royal Navy and in Lord Barrington for placing these papers at the Society's disposal.

War at Sea under Queen Anne, 1702-1708. By Commander J. H. Owen, R.N.
(Cambridge University Press). 21s.

The "silent pressure of sea-power" was well exemplified in the War of the Spanish Succession. The naval side of it was marked by no resounding victories to

be cheered by a shouting populace ; the only large fleet action of the war produced (most unjustly) a partial disgrace for the English Commander-in-Chief. Yet sea-power was fruitful, and England ended the war, to say the least, with an assured position in the Mediterranean. There can be no doubt, however, that it is the drab nature of sea warfare that has led one historian after another to devote his attention to the military side, particularly as it is rich in exactly what naval warfare lacks—victories, full of imagination and colour, won by the genius of Marlborough : the Navy had no Trafalgar to set against Blenheim. So much, indeed, have the dazzled moths fluttered around the bright light of the great General that books dealing intelligently with the naval side of the war could almost be counted on the fingers.

Commander Owen has refused to be dazzled, and has consequently produced a study of the naval side of the war that has long been wanted and will be invaluable to scholars. He has done his work carefully and thoroughly, and introduced a great deal of new material, not only into his studies of the Mediterranean campaigns, but into those concerning the protection of trade—an aspect of maritime warfare so frequently overlooked. The most surprising thing to the reader is, perhaps, the readiness of the French, on suitable occasions, to board English ships, and the not infrequent inability of the English to repel them.

Commander Owen's book disappoints slightly in two ways. It is not altogether complete—the West Indies, for example, receive rather cavalier treatment, and consequently cannot be regarded as definitive. It is also too exclusively a record of fact. Commander Owen sees naval warfare through sober eyes, and this, to some extent, is a source of strength to him, for it enables him to perceive that the protection of trade is as important as (if not more important than) a pitched battle ; but his essential sobriety leads also to monotony. Could he but raise the level of his style slightly at the culminating point of some hard-fought action ; could he show some awareness of the great inner forces at work ; then his book would be a good deal more readable. History is not only a science : it is full of drama, while psychology often plays a vital part.

Perhaps, however, if Commander Owen had possessed these merits, he would have been merely another moth fluttering round the Marlburian lamp ; and that would indeed have been a pity, for he has written the fullest account yet of naval warfare under Queen Anne, and future scholars of the period will neglect his book at their peril.

The Grey Diplomatists. By Lieutenant-Commander Kenneth Edwards, R.N.,
(Rich and Cowan). 15s.

The story told by this interesting book justifies the choice for its text of Nelson's remark that "A fleet of British ships of war are the best negotiators in Europe." Its account of the activities of those "Grey Diplomatists" in the Mediterranean since the War covers two periods: one, the 'leavings' of the War beginning with the Greek occupation of and ejection from Asia Minor ; the other, the present series of disturbances from the Italo-Abyssinian war to the existing tension over Spanish affairs. In spite of the long intermediate period, when governments were more concerned in jettisoning our Navy's power by word and deed than in making a proper use of that power, the record is remarkable for the number of major incidents in which the Service was involved. Although it could not hope to exert its normal influence on international affairs, the narrative of the present period shows how much of its potency still remained to an attenuated Navy. The author's style, which perhaps detracted from the historical rectitude of his last book, is here exactly what

is required, while the many yarns with which he enlivens the story help to make it attractive. As befits a Naval Correspondent of the late *Morning Post*, his outlook is decidedly a Conservative one, but his blame of governments is distributed impartially when merited. His criticisms of Admiralties is moderate and appreciative of their difficulties, but he makes some pertinent comments on the handling of the "Basilisk" incident, with its implied reflection on the Navy's tackling of a difficult and well-performed task.

The diplomatist's task is to prevent war, and this interesting volume is well designed to bring home to our countrymen that to us an adequate Navy is not only a valuable but an indispensable instrument of diplomacy, while it should give to those of its readers who shared in the thankless task of preserving the Navy's spirit through the disheartening years of neglect, the satisfaction of realizing that their efforts were not fruitless.

Warships at Work. By Commander John Hunt, R.N., and Allan Baddeley (late R.N.). (John Miles). 7s. 6d.

This excellent book does far more than its title suggests. Besides handling an individual ship at sea, and a fleet, bringing the latter to and through a fleet action, describing types of ships, their duties and representation in our Navy, their weapons and how and when used, it notices every incident of life and routine on board in harbour and at sea. Then, after an interlude on traditional customs and phrases, it takes an imaginary cruiser from its inception to its arrival as a new unit on a foreign station. A concluding chapter on "Command of the Sea" gives an idea of the Navy's part in our strategy. The treatment is straightforward, interesting and refreshingly free from sensationalism, and, not least, its ships are the "So-and-so." Any intelligent citizen after reading what is justly described by Admiral Sir William James in a foreword as "this admirable work," should find his intelligence including a useful understanding of the why and how of our Navy's work. The book is equally suited for a present to a youngster—and its price is low.

MILITARY

Der Durchbruch. Studie an Hand der Vorgänge des Weltkrieges, 1914-18. By General der Artillerie Konrad Krafft von Dellmensingen. (Hamburg, Hanseatische Verlagsanstalt). 14.65 R.M.

In a four hundred and fifty page book, General Krafft von Dellmensingen has written an exhaustive treatise on the breakthrough, based on the experience of 1914-18. He is an authority on the subject, as in August, 1914, he was Chief General Staff Officer to Crown Prince Rupprecht, and in 1915 proposed a breakthrough near Arras. Later he planned the Caporetto operations, and in March, 1918, was Chief General Staff Officer of the German Seventeenth Army, which attacked Byng's Third Army. The book is a most valuable compendium of the principles of breaking a front, about a quarter of it being devoted to the consideration and criticism of the March, 1918, offensive.

The official German doctrine before the War sought victory exclusively by envelopment. This doctrine had its extreme case in the "Cannae" theory of Graf Schlieffen, Chief of the General Staff from 1889-1904. He held that frontal attacks were difficult, costly, and not very profitable, and believed that the power and training of the German Army would be best employed in the freer form of open warfare, particularly in attack on the flanks and rear of the enemy. Only in 1912, shortly before his death, did he realize that the envelopment of the French as he

had proposed in the celebrated "Schlieffen Plan" of 1905, might, in view of the increase of the French Army and other factors, be impossible. In that year he suggested that it might be necessary to proceed in siege fashion (*belagerungsmässig*) and "achieve tactical breakthrough in the greatest possible breadth and at many places, but gain the strategic decision not so much by rolling up the adjacent fronts, as by general envelopment operations carried out against the rear of these fronts."

The German General Staff Quarterly (*Vierteljahreshefte für Truppenführung und Heereskunde*) in the ten years of its publication before the War contained only two articles which dealt with the breakthrough, or, as we then called it, "breaking a front." The first ended with the words :—

"Thus the history of the breakthrough battles in the XIXth Century is nearly an unbroken succession of failures."

And it was held that when a breakthrough did happen to be accomplished (Eylau, Aspern, Wagram, Waterloo) it was due to exceptional circumstances. The second article pointed out that although Moltke I considered frontal attacks indispensable, and possible, he seldom spoke about them. Only one German writer, General von Bernhardi, advocated breaking the enemy's front, and by the use of the Napoleonic "square": the attacking army being backed up by strong forces behind its flanks and followed by a reserve to exploit the success.

The French official theory was, until 1912, in direct opposition to the German: most writers, for instance Generals Langlois and Bonnal, followed it, preaching that victory could be obtained by one great massed blow. The French field service manual issued late in 1913, however, recommended that the main attack should be directed "against one of the enemy wings on one sector only of his front. The direction of a wing is, in general, the most advantageous." But the predilection for the frontal breakthrough had obtained so long that it had not entirely disappeared when war began. In any case, the minds of the French staff were prepared for the re-adoption of the breakthrough. The British entered the War with no particular theory except that of using movement to get near to the enemy and fire to destroy him.

General von Dellmensingen carefully classifies and describes the breakthrough attempted in the War under various headings: (a) in open warfare, with 15 examples—the Marne and First Ypres among them; (b) against a continuously defended front and in trench warfare, with 26 examples; (c) special cases: (1) through mountainous country, (2) across a river, (3) against a permanently fortified area, (4) with special apparatus (gas, mines and tanks).

Of Cambrai, 1917, he says :—

"The attempt to exploit the initial success of the tanks in unrehearsed co-operation with cavalry masses, was unlucky both in conception and execution. A breakthrough could perhaps have been attained only by the employment of deeply-echeloned reserves in co-operation with fresh waves of tanks, directed by a single command. The German artillery was fortunately disposed in depth, and although too little had been done for direct anti-tank defence, the artillery, in combination with the other arms, prevented penetration."

He concludes the account of the August, 1918 operations, as follows :—

"In spite of the weakness of the German artillery, its unfavourable

distribution (mass on the northern wing) and its high initial losses, of the [British] tanks engaged the following numbers were put out of action :—

On the 8th August,	100	out of 415	—about $\frac{1}{4}$.
" 9th "	39	" 145	—about $\frac{1}{3}$.
" 10th "	30	" 67	—about $\frac{1}{2}$.

Thus there was a very rapid decrease in the number of tanks engaged and an increasing percentage of losses. Besides this, many tanks became less serviceable owing to mechanical defects, thus quickly reducing their effectiveness."

In general, the author regards the use of the breakthrough with a view to gaining a decisive success, as an *ultima ratio* and the attack form of superior numbers. It can usually be met more easily and more quickly by the reserves than can an enveloping attack. Unless the breakthrough is on a very wide front, or the breach is immediately widened, the attackers may be cut off in a "sack." Yet unless, also, they penetrate a considerable distance, the effect cannot be decisive. On the other hand, to drive through gradually by a series of attacks with limited objectives, always under protection of concentrated artillery fire, is "a slow, tiresome and costly method which can only be adopted when unlimited time, unlimited reserves of men, apparatus, industrial facilities, raw materials, food supplies and money are available." Better is a succession of attacks at different places. Both methods were adopted, but only as an acknowledgement that with the relative means available on the Western Front a rapid breakthrough by sheer force was unattainable. Ludendorff's series of offensives in 1918 brought about only the premature end of the German Army. The results bear out the correctness of the views of Moltke I, that a breakthrough cannot be decisive "unless the operation is effected by one blow within a very short space of time." General Nivelle was right when he wrote :—

"To enter such a conflict it is necessary to have complete faith in its success and the unshakeable determination to see it through without any reservation whatever."

For such a frame of mind, "the best school was, and still is, thorough training in mobile warfare."

The most difficult case will always be the planned breakthrough against a prepared defensive position. This entails two main tasks: first, the tactical breakthrough of the enemy's complete fortified system; and, secondly, the widening of this, after battle with the enemy's reserves, into a strategic breakthrough. It should be noted that the author, as a rule, by "strategic breakthrough" means a march through at some undefended gap.

Success depends upon many factors—surprise, weight of the artillery preparation, breadth of front and distribution of the troops. As regards the last, besides (1) the breakthrough troops proper, there must be (2) widening forces, whose only task is to roll up the adjacent fronts, simultaneously protecting the flanks of the main attack; (3) reserves to complete and exploit the operation. The breakthrough cannot be achieved by mere weight of troops; a front of 2,000 to 3,000 yards per division was, as a rule, the best; a 1,000 yards was too little. Command should remain without change in the hands of the foremost leaders—apparently the corps commanders—who take over the reinforcements sent up by the corps commanders in second line; Army and Army Group commanders and O.H.L., must not interfere: "leading strings from well behind are always most dangerous."

Passive flank protection is not enough, unless a good obstacle or a strong defensive line is available. Widening the attack by frontal extension of the assault is not advisable ; the initiation of rolling up the enemy's line, or of widening of the breach at some later time is distinctly inadvisable.

Reserves should follow certain formations in the front line as their rear echelons, and should not be grouped together under a special commander. If reserves are to be pushed into a space in the line made for them as the advance proceeds (as, for instance, the French Tenth Army in the Nivelle offensive), they most, of course, have their own commander.

The choice of the place to be broken through depends on many factors ; but if a rapid decision is desired, the first condition is that the attack should have only a short way to go in order to bring about a situation which threatens vital interests of the enemy, or at least gains some important strategic advantage. For example, the capture, or the threat of capture, of the enemy's capital (Bukarest) ; the cutting his line of communications (Italian Isonzo Army, from the Trentino ; the British from the Channel ports, March 1918) ; cutting lateral communications (Amiens, Marne valley) ; and the driving of one part of the hostile Army on to an obstacle (frontier or sea).

General von Dellmensingen disapproves of Ludendorff's phrase in reference to March, 1918 : "Tactics came before pure strategy. The point was to break through somewhere." If the enemy can abandon ground and so gain time without decisive results (offensive against Amiens ; attack against the Chemin des Dames), the successful tactical breakthrough has failed in its object. He recalls with approval Sir Douglas Haig's appreciation of the disposal of his troops in early 1918, and Foch's phrase of the 26th May, 1918 : "It is better to be surprised anywhere else than where a defeat is irremediable." In March, 1918, German O.H.L. only looked out for a weak spot, and by this, in the first place, was meant where the defenders were weak in numbers ; the strength of the fortifications and the natural strength of the sector did not so much matter. This principle held good when a massed artillery attack was the principal factor in a breakthrough. Colonel Wetzell's plans were founded on what he had learnt from the Allied offensive in 1917.

When once Ludendorff had decided to attack the British as the "main support of the enemy's will to continue the War," time and the difficulty of shifting the great apparatus of attack did not permit of real change—mechanization of armies will make change easier. The author considers that "the deployment and sector selected for the March attack did not tally with the main strategic idea." His principal criticism is that the initial attack should have stretched a little further to the right to include Arras, at the expense of the left—which, to favour the German Crown Prince, was made too strong.¹

To smash the enemy's reserves by a massed attack at a single place requires a powerful superiority in numbers. To attack simultaneously at two places usually has a better effect, but entails the employment of even larger forces. Better is it to have one main attack and several diversion attacks, which need not be so deeply echeloned, in order to attract reserves ; if rapid means of transport are available

¹ In a lecture in 1921 the compiler of this summary suggested that the La Bassée-Ypres sector being barred by weather in March, the best front for attack was Reims-Montdidier, which was near the Allied junction but exactly as much inside the French front as the La Fère-Croisilles front, which Ludendorff selected, was inside the British.

the troops can be shifted from one attack to another—this is comparatively easy to do as regards guns and trench mortars. It must, however, be borne in mind that diversion attacks are seldom really effective in attracting enemy reserves ; nor must a diversion attack be carried too far : the too successful Chemin des Dames offensive in May, 1918, exercised material influence on the operations as a whole ; better give up ground thus won undesired. A breakthrough must be carried out with relentless energy ; full advantage must be taken of the effect of the initial blow, and the advance carried on night and day—time is everything. An attempt to break through can usually be met by yielding ground and a subsequent counter-offensive. Unless the defence has large reserves—usually unlikely—the attack must be met frontally ; but counter-attack from a flank, or at some other part of the front, offers the best chances.

General von Dellmensingen concludes the book with a memorandum which he wrote in May, 1918, giving a calculation of the forces required for a breakthrough on the Western Front. The main figures are that to break through on a 60-mile frontage, forty divisions were required in first line, with a similar number in second line, and another forty, or at least twenty, in third line, if the enemy had fifty divisions in free reserve ; or, otherwise put, the attackers must have a free reserve double that of the enemy. For artillery, the O.H.L. figures were : fifty-one batteries (of four guns) for the double kilometre (2,200 yards), two-thirds light and the rest heavy. The Seventeenth Army had found this estimate, which gave one gun per 10-metre front, too little ; one gun per 6 metres is desirable.

Mechanization or no mechanization, when the adversaries are otherwise evenly matched, numbers are necessary for victory : no novelty or brilliancy of tactics will compensate for inferiority of numbers.

Science and Mechanization in Land Warfare. By Lieut.-Colonel Donald Portway. (W. Heffer & Sons, Ltd.). 6s.

The author of this little volume has no need to apologize, as he does in the Preface, that a Territorial should presume to write on military topics, for apart from the fact that the military responsibilities of that force are rapidly becoming as great as those of the Regular Army, its members have produced many of the most important inventions of war. He, himself, has been associated with both the Navy and Army for over thirty years, one of his appointments being on the instructional staff of the R.N. College, Dartmouth.

The book does not claim to be in any way a comprehensive treatise of such a vast subject as the title implies, but it covers, briefly, fundamental scientific principles associated with military appliances, railways in war, mechanization, chemical warfare, weather, the work of the Royal Engineers and Royal Corps of Signals, and Artillery survey.

As Field Marshal Lord Birdwood says in the Preface, it should be of value not only to the candidate seeking admission to the Army through the University—where the author is a lecturer—but also to the Regular and Territorial officer.

AIR

The Clouds Remember. By B. L. Bridgman. (Gale & Polden). 10s. 6d.

"The Clouds Remember" is not only an artistic production in that it will give real satisfaction to the air sensed, but it is important because of the lesson it can convey to the perceptive.

The illustrations are all that one would have expected from Mr. Leonard Bridgman, and the commentary is illuminating in its sympathetic understanding and sometimes humorous restraint. It is not only the clairvoyant who will know the aircraft in which Mr. Stewart himself has flown most—I almost found myself resenting the comparatively scanty treatment accorded to some old friends of mine. He explains this shortcoming, if shortcoming it is, when he says on page vii of the Preface, "for there is nobody more prejudiced than the average pilot"—and how true that is!

In the description of the types of aircraft produced by the Royal Aircraft Factory, whether consciously or unconsciously, he brings out damning evidence against the policy of leaving the control of development in the hands of the scientific, though unpractical, or under authorities in the Field or at Home if they themselves are without practical personal experience of air warfare.

To read the story of the gradual development of the B.E.s and the R.E.s is to have vividly conveyed to the mind the errors that personal prejudice and ignorance can innocently perpetuate, and at what a cost!

To recall that, at the period of the War when the B.E.12 was being produced, the fixed front guns were designed to be splayed out from the centre line of the aircraft seems almost incredible. In startling contrast to the almost uniformly poor result obtained by the Government-controlled factory (the S.E.5 was an exception) the achievements of the private designers, who themselves were pilots, such as Sopwith, de Havilland, and Barnwell of Bristols, stand out vividly. He remarks on page 48: "The fighting pilot on active service, however, had one advantage over the peace-time supply officer: he could tell exactly what sort of performance he needed." These two sentences epitomize the main lessons to be drawn from this book. They are that the designer must not be a Government employee and that he must be guided by a committee of pilots of recent and active experience.

To emphasize the special qualities of the different types several inspiring incidents of the War are related: for instance there is that great leader, Air Commodore Samson—a man typical of the naval spirit, so jealously excluded from control in the Air Force by the then military hierarchy—who himself took out the first 500-lb. bomb in a Henri Farman; and Captain Leckie who led his formation of three F2A flying-boats and drove straight through a hostile formation of sixteen enemy seaplanes, shooting down six with a loss of two, due to engine failure.

A remarkable instance of pugnacious determination of a pilot and of the strength of the Sopwith Pup was Oliver Sutton's head-on charge at a German aircraft: he got away after tearing the enemy's wing off. A charge head-on merely to shoot down an enemy, and not to escape in air combat, by a man of imagination connotes a bulldog courage of a high order, and the designer of our service fighting harness certainly had imagination. This is a book the Services should read.

ADDITIONS TO THE LIBRARY

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THE ECONOMY OF BRITAIN. By H. M. Croome and R. J. Hammond. 8s. 6d. 8vo. (Christophers).

THE POST-WAR WORLD. By H. Jackson. 6s. 8vo. (Gollancz).

OURSELVES AND GERMANY. By the Marquess of Londonderry. 5s. 8vo. (Robert Hale, Ltd.).

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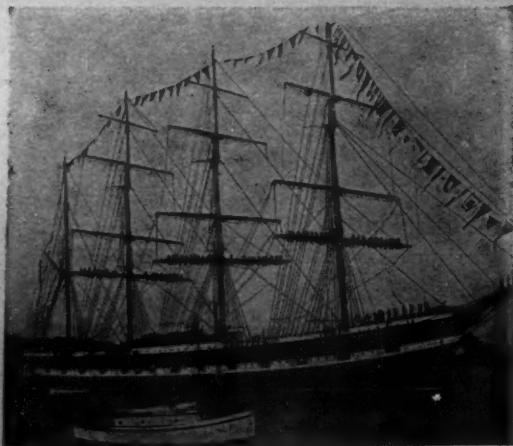
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